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PUBLIC HEALTH REPORTS.

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UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since Jan. 1, 1910.]

SYRACUSE, N. Y.

FOODSTUFFS—PROTECTION, CARE, AND SALE.

SUBD. C. *Sale of food products.*—No person shall bring into the city, or keep or offer for sale for food therein, any meat, fish, birds, fowls, fruit, or vegetables that are not healthy, fresh, and wholesome, or any veal of a calf under 4 weeks old, or pork of a pig under 5 weeks old, or mutton of a lamb under 8 weeks old. Any of the unwholesome food products here mentioned shall be seized wherever found by the commissioner and destroyed as the commissioner may direct.

No person shall keep any articles of human food in any receptacle that has become musty or otherwise polluted.

No person shall permit the carcass, body, or meat of any animal, or any fish, to lie or hang or be offered for sale outside of any market, store, or in any open window or doorway.

SUBD. D. *Sale of certain food forbidden.*—No ice cream, fruit, candy, macaroni or other foodstuffs made, prepared, or stored in any sleeping quarter or place contaminated by filth, dust, or obnoxious gases or otherwise insanitary shall be sold or offered for sale.

SUBD. E. *Sale of certain breadstuffs prohibited in open spaces unless protected.*—No breadstuffs, cake, pastry, dried or preserved fruit, candies or confectionery shall be kept, sold, or offered for sale in the city or in any street or public place or delivered unless they be kept properly covered so they shall be protected from dust and dirt.

The body of any animal, or any part thereof, which is to be used as human food shall not be carted or carried through any streets or avenues unless covered so as to be protected from all dust and dirt.

SUBD. F. *Bread, biscuits, bake stuffs sold from wagons to be covered.*—All bread, biscuits, pies, and other bake stuffs sold from wagons or other vehicles are to be protected by paraffin paper or other covering. (Ordinance adopted March 27, 1911.)

HOBOKEN, N. J.

LODGING HOUSES—LICENSING AND REGULATION OF.

SECTION 1. A lodging house is hereby defined to be a building, or part of a building, where lodgings are provided and let for profit, only as sleeping quarters for persons.

SEC. 2. No person, firm, or corporation shall maintain a lodging house in the city of Hoboken unless a permit therefor shall be first obtained by such person, firm, or corporation from the board of health of this city, and shall pay therefor a license fee of $1 per bed per year. Said license fee shall be payable upon issuance and said licenses may be renewed on the 1st of May of each year thereafter.

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Sec. 3. Every person, firm, or corporation conducting the business of a lodging house shall be governed by the following regulations:

Every lodging house shall be provided with at least:

(*a*) One shower bath on each floor, to be supplied with hot and cold water and open for the free use of lodgers at all times.

(*b*) One washbasin for every 25 beds or fraction thereof.

(*c*) One water-closet for every 25 beds or fraction thereof.

(*d*) One urinal for every 50 beds or fraction thereof.

(*e*) An adequate supply of clean towels shall be provided for lodgers free of charge.

(*f*) Lodging-house keepers shall cause all floors to be thoroughly scrubbed once in each week, all side walls, ceilings, beds, and furniture to be thoroughly cleaned and scrubbed at least once in every 30 days (where walls are whitewashed they shall be rewhitewashed once in every six months).

(*g*) All floors to be sprinkled with a solution of carbolic acid before sweeping, which shall be done once in each day.

(*h*) All beds to be so arranged that the air shall circulate freely under and around each of them; all windows shall be open top and bottom at least three hours in each day; ventilation shall be in accordance with the ordinances, regulations, resolutions, and rules of the board of health of Hoboken and the laws of the State of New Jersey.

(*i*) All beds, bed clothing, mattresses, and pillows shall be kept free from vermin.

(*j*) Every person, firm, or corporation maintaining a lodging house or houses in the city of Hoboken shall keep the same at all times clean and free from dirt, filth, garbage, and rubbish in or on the premises belonging to or connected with the same.

(*k*) All washbasins, baths, water-closets, windows, fixtures, furniture, fittings, and painted surfaces shall be at all times kept thoroughly clean and in good repair.

(*l*) All bed linens to be laundered once every three days.

Sec. 4. Any permit obtained as aforesaid may be revoked by the board of health upon 10 days' notice, when in its judgment any of the above regulations are being violated.

Sec. 5. Any person, firm, or corporation violating any of the provisions of this ordinance shall forfeit and pay a penalty of not less than $25 nor more than $50. [Ordinance adopted June 28, 1911.]

PITTSBURGH, PA.

OFFENSIVE TRADES—REGULATION OF.

Section 1. *Be it ordained and enacted by the city of Pittsburgh, in select and common councils assembled, and it is hereby ordained and enacted by the authority of same*, That no person, firm, or corporation, agent, owner, or occupant shall permit or have any offensive water or other liquid or substance on his, her, or their premises or grounds, in the city of Pittsburgh, to the prejudice of life or health, whether for use in any trade or otherwise; and no establishment or place of business for tanning, skinning, or scouring, or for dressing hides or leather, or for carrying on any offensive or noisome trade or business shall hereafter be opened, started, established, or maintained in the city of Pittsburgh without a permit from the department of public health. And every such establishment now existing shall be kept cleanly and wholesome, and be so conducted in every particular as not to be offensive or prejudicial to life or health.

Sec. 2. No person or corporation being a manufacturer of gas or engaged about the manufacture thereof shall throw or deposit or allow to run, or shall permit to be thrown or deposited in any public waters, river, or stream, or in any sewer therewith connected, or in any street or public place, any gas, tar, or any refuse matter of or from any gas-house works, manufactory, mains, or service pipes; or permit the escape of any offensive odors from their works, mains, or pipes; nor shall any such person or corporation permit to escape from any of their works, mains, or pipes any gas dangerous or prejudicial to life or health; or manufacture illuminating gas of such ingredients and quality that in the process of burning it any substance which may escape therefrom shall be dangerous or prejudicial to life or health; or fail to use the most approved or all reasonable means for the preventing of the escape of odors.

Sec. 3. It shall not be lawful for any person or persons, incorporated or unincorporated, to carry on, establish, prosecute, or continue within the city of Pittsburgh the occupation or trade or business of bone boiling, bone burning, bone grinding, horse skinning, cow skinning, or skinning of dead animals, or the boiling of offal; and any such establishments or place of business existing within said city shall be forthwith removed out of said city, and such trade and occupation or business shall be forthwith abated and discontinued, providing that nothing in this section contained shall apply to the slaughtering or dressing of animals for sale in said city, and in conformity to the laws of the State.

SEC. 4. The business of bone crushing, bone boiling, bone grinding, bone and shell burning, lime making, horse skinning, cow skinning, glue making, cheese making, boiling fish, swill or offal, heating, drying, storing of blood, scrap, fat, grease, or offensive animal or vegetable matter, or manufacturing materials for manure or fertilizer shall not be carried on or continued within the city of Pittsburgh without a permit from the department of public health.

SEC. 5. Nor shall any buildings be erected or converted or used for the carrying on of any business above mentioned until the plans thereof have been duly submitted to the department of public health and approved in writing by said department of public health.

SEC. 6. All persons engaged in the boiling, or rendering fat, lard, animal matter shall cause the scrap or residuum to be dried or otherwise prepared so as to effectually deprive such material of all offensive odors, and to preserve the same entirely inoffensive, immediately after the removal thereof from the receptacles in which the rendering process was conducted.

SEC. 7. No fat, tallow, or lard shall be melted or rendered, except when fresh from the slaughtered animal, and taken directly from the places of slaughter in the city of Pittsburgh, and in a condition free from sourness and taint and all other causes of offense at the time of rendering, and all melting and rendering must be in a steam-tight vessel, and the gases and odors therefrom must be destroyed by combustion or other means equally effective and according to the best and most approved means and processes; and everything preceding, following, and in connection with such melting and rendering and the premises where the same shall be conducted must be free from all offensive odors and other cause of detriment to the public health. No fat, lard, or tallow shall be brought into the city of Pittsburgh to be rendered or melted and none shall be rendered or melted that has come from any place outside of the city of Pittsburgh without a permit from the department of public health. The business of melting or rendering fat, tallow, or lard shall not be carried on or conducted in the city of Pittsburgh without a permit from the department of public health.

SEC. 8. No person, firm, or corporation shall build or use any asphalt factory, slaughterhouse, cattle yard, phosphate or fertilizing works or storehouse, rendering establishment, or works for the reduction of garbage, dead animals, or night soil, or any soap factory, tannery, or other place or establishment that shall give rise to nauseous or offensive odors without permission from the department of public health.

SEC. 9. Any person or persons who shall fail, neglect, or refuse to comply with or who shall violate any of the provisions of this ordinance shall, upon conviction thereof in a summary proceeding before any police magistrate or alderman in the city of Pittsburgh, be sentenced to pay a fine of not more than $50, and in default of payment thereof to be imprisoned in the county jail for a period of not more than 30 days. [Ordinance adopted Mar. 27, 1911.]

SYRACUSE, N. Y.

OFFENSIVE TRADES.

SEC. 7. SUBD. I. *Offensive places of business.*—No person, firm, or corporation shall build or use any asphalt factory, slaughterhouse, cattle yard, phosphate or fertilizing works or storehouse, rendering establishment, or works for the reduction of garbage, dead animals, or night soil, or any soap factory, tannery, or other place or establishment that will give rise to nauseous or offensive odors without written permission from the commissioner, which permission must be registered with the commissioner.

Every person, firm, or corporation owning, leasing, or occupying any place where any cattle or swine have been or hereafter shall be killed or dressed shall cause such place and their yards and appurtenances to be thoroughly cleansed and purified and all offal, blood, fat, garbage, refuse, or offensive matter to be removed therefrom at least once in every 24 hours after the use thereof for any of the purposes herein referred to.

Without written permission from the commissoner no person shall in the city of Syracuse keep any place for the storage, drying, cleaning, or assorting of rags or waste paper. [Ordinance adopted Mar. 27, 1911.]

MEMPHIS, TENN.

SECONDHAND CLOTHING—SALE OF.

SECTION 1. *Be it ordained by the board of commissioners of the city of Memphis,* That any person or persons desiring to conduct a rummage sale or sale where secondhand articles of clothing are disposed of shall, before selling or offering for sale any such articles of secondhand clothing, apply to the superintendent of health for a permit to conduct said sale, and comply with the terms of this ordinance.

SEC. 2. *Be it further ordained,* That the applicant for a permit to conduct a rummage sale shall state where the goods are to be sold and the character of articles intended to be disposed of, and shall, before the same are sold or offered for sale, allow them to be fumigated in such a manner as the superintendent of health shall direct.

SEC. 3. *Be it further ordained,* That upon the applicant complying with the conditions herein, said superintendent shall issue a permit to the said applicant to conduct said sale stating therein the number of days the sale is to be authorized and the character of articles which may be disposed of.

SEC. 4. *Be it further ordained,* That this ordinance shall not apply to persons selling exclusively their own wearing apparel, provided the same is not offered for sale in some public place.

SEC. 5. *Be it further ordained,* That any person violating this ordinance shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than $5 and not more than $50.

SEC. 6. *Be it further ordained,* That this ordinance take effect from and after its passage, the matter being one of necessity, and the public welfare requiring it. [Ordinance adopted Aug. 9, 1910.]

PITTSBURGH, PA.

RAGS—STORING, CLEANING, DRYING, AND SORTING.

SECTION 1. Without permission from the department of public health of the city of Pittsburgh, no person, firm, or corporation shall keep within the built-up portions of the city any building or place for the storage, drying, cleaning, or assorting of rags unless the said premises be at least 200 feet from any house, factory, or other building occupied by human beings.

SEC. 2. Any person or persons who shall fail, neglect, or refuse to comply with, or who shall violate, any of the provisions of this ordinance shall, upon conviction thereof in a summary proceeding before any police magistrate or alderman in the city of Pittsburgh, be sentenced to pay a fine of not more than $25, and in default of payment thereof to be imprisoned in the county jail for a period of not more than 30 days. [Ordinance adopted Mar. 27, 1911.]

SPRINGFIELD, ILL.

HOUSEHOLD GOODS AND CLOTHING—SALE OF SECONDHAND.

SECTION 1. Any charitable or religious organization of the city of Springfield desiring to conduct a sale of secondhand furniture, household goods, secondhand clothing, and other such articles which such sales are usually known and designated as "rummage sales," shall make application to the health department for the holding of such sales.

SEC. 2. The superintendent of health shall examine or cause to be examined the articles to be offered for sale by such organization, "charitable or religious," and if the same are not deleterious to the health of the city, he may issue a permit authorizing such organizations to conduct a sale of the articles inspected by him, which sale in no instance shall be conducted by any such organization for a longer period than three days of any calendar year.

SEC. 3. An inspection fee of $2 shall be collected by the superintendent of health, but in no instance shall any other license fee be charged such charitable or religious organizations.

SEC. 4. Any person or persons conducting a rummage sale within the meaning of this ordinance or anywise connected therewith, without first obtaining a permit therefor, shall be liable to a fine of not less than $5 nor more than $100 for each offense. [Ordinance adopted Oct. 17, 1910.]

INDIANAPOLIS, IND.

PRIVIES AND CESSPOOLS—CLEANING OF.

SECTION 1. *Be it ordained by the common council of the city of Indianapolis, Ind.,* That section 7 of an ordinance designated as an ordinance regulating the cleaning of privy vaults, water-closets, and other receptacles of human excrement and requiring persons who are engaged in such business to be duly licensed before doing said work be amended as follows:

"SEC. 7. The license required by section 2 of this ordinance shall be issued by the city controller upon the application of the person desiring the same, who shall at the same time deposit with the controller the receipt of the city treasurer showing the payment to the city treasurer of the license fee hereinafter in this section fixed. All licenses shall expire on the last day of June of each year, and all applicants for such license shall pay into the city treasury the sum of $5."

SEC. 2. All ordinances and parts of ordinances in conflict herewith shall be and the same are hereby repealed.

SEC. 3. This ordinance shall be in full force and effect from and after its passage and from and after its publication once a week for two consecutive weeks in the Indianapolis Commercial, a daily newspaper of general circulation printed and published in the city of Indianapolis. [Ordinance passed Dec. 19, 1910.]

SYRACUSE, N. Y.

PRIVIES AND CESSPOOLS—CONSTRUCTION AND MAINTENANCE.

SEC. 7, SUBD. C. No privy vaults, sink, or cesspool hereafter shall be built except by permission of the commissioner and in accordance with his directions; nor shall any building or cover be placed over any such vault, sink, or cesspool until the same has been inspected and found to be in accordance with the permit granted. All such privy vaults or cesspools shall be built of brick, stone, or cement. All privy vaults hereafter made shall be of such dimensions as to contain at least 50 cubic feet for every family or group of five persons using the same; and such vault shall be so constructed as to be conveniently cleaned, and shall be made and maintained in such manner as to prevent the contents thereof from escaping. No privy vault or cesspool hereafter shall be built except in such places where there can not be had connection with a public sewer, or with the public or other constant water service; and no privy vault or cesspool shall be built or maintained except upon premises which will permit their location at a distance of at least 5 feet from any adjoining building used for human occupation, or for the storage of human food, and at least 5 feet distant from the several lot lines of the lot on which the same is placed or the lines of any street adjoining such lot. In cases where the provisions of this ordinance do not allow privy vaults there shall be provided for all premises on which there are houses or other buildings used for human habitation, either for business, meeting, or dwelling purposes, a water-closet or a suitable number thereof, as determined by the commissioner.

No privy vaults or cesspools shall be allowed to remain on any lot adjoining a street containing a sewer and city water.

Whenever any vault, privy, or drain shall become offensive or obstructed, the owner, agent, or occupant of the property where it is situated shall clean or repair the same forthwith. No privy vault shall be cleaned, emptied, or removed without a special permit from the commissioner, except by a licensed scavenger. Whenever satisfied that any privy is offensive and should be removed or needs cleaning, the commissioner shall notify the owner, agent, or occupants of the property to remove or clean the same within the period named in said notice. In case the owner or agent fails or neglects to do so, or in case the owner or agent is unknown, the commissioner shall cause such offensive privy to be removed, abolished, or cleaned. Where the owner, agent, or occupant neglects or refuses to comply with the order, the commissioner may cause such vault, privy, or drain to be removed, altered, repaired, or cleaned, as he may deem expedient, and the costs of such removal, alteration, repairing, or cleaning shall be collected from the owner of the property in the manner provided in section 4, subdivision B, and shall be a lien upon the premises as provided in section 4, subdivision C.

The cleaning, emptying, and removing of the contents of privy vaults shall be done in an inoffensive manner, and any scavenger having begun any such work shall, without interruption or delay, finish the same, and shall in every instance leave the privy in as good condition upon the vault as when the work was undertaken. The contents of privy vaults so removed shall be disposed of in a manner approved of by the commissioner.

During the prevalence of epidemics or contagious diseases all putrid and offensive matter and all night soil and the contents of sinks, privies, vaults, or cesspools, before their removal or exposure, shall be disinfected and rendered inoffensive by the owner, lessee, or occupant of the premises where situated; and if not so done, then said disinfecting shall be done by the contractor who removes the same; and the person, not being such tenant, owner, or occupant, who shall so disinfect or remove the same shall be entitled to demand and receive a compensation to be fixed by the commissioner and paid by such tenant, owner, or occupant.

No person shall deposit any slops, liquid of any offensive kind, garbage, contents of sink, privy, or cesspool, manure, offal, or anything which can become offensive human beings or detrimental to public health upon any street, lot, public or place; nor deposit in any vault, privy, sink, or cesspool any offal, meat, fish, or garbage; nor shall any slops or kitchen waste be permitted to run into any privy or cesspool; provided, however, that manure may be placed on private lands for the purpose of fertilizing.

When any lot or excavation shall from any cause whatsoever become the repository of stagnant water or of any decaying or offensive substance, liquid or solid, it shall be the duty of the owner or occupant within a specified time, given in a written notice from the commissioner, to cause such lot or excavation to be drained or to be filled with clean earth or other inoffensive substance. [Ordinance adopted Mar. 27, 1911.]

TRENTON, N. J.

PRIVIES AND CESSPOOLS—LOCATION, CONSTRUCTION, AND MAINTENANCE.

SEC. 128. *Permits required.*—That no privy vault, cesspool, or manure pit shall hereafter be constructed or reconstructed within the city of Trenton without a permit for that purpose being first had and obtained from the board of health.

SEC. 129. *Plan and description.*—That no permit for the construction of a privy vault, cesspool, or manure pit shall be issued as required in the above section until there shall be filed in the office of the board of health a plan or drawing in ink and written description thereof, signed by the owner or lessee of the premises upon which such privy vault, cesspool, or manure pit is to be located, showing in detail the proposed construction of the same, and said description explaining all portions of the proposed construction not clearly set forth in the plans or drawings and written description thereof properly approved by the inspector of plumbing in writing.

SEC. 130. *Fee for filing plan.*—That the owner or lessee of such premises or other person filing any such plan as is set forth in the next two preceding sections shall, at the time of such filing and before the said plans or drawings and the written description thereof are approved by the inspector of plumbing, pay a fee of 25 cents to the board of health for every such plan.

SEC. 131. *Work in accordance with plan.*—That all work upon any privy vault, cesspool, or manure pit hereafter to be constructed or reconstructed in the city of Trenton shall be strictly in accordance with the approved plan or drawing and the written description thereof as hereinbefore required to be filed.

SEC. 132. *Where cesspools to be constructed.*—That every person who shall construct a cesspool in connection with a building within this city shall not construct such cesspool within the distance of 50 feet from any stream of water or well which is used for domestic purposes, or otherwise in such a position as to endanger the pollution of such water.

SEC. 133. *Cesspools near potable water.*—That every person who shall construct a cesspool in connection with a building within this city shall construct such cesspool at a distance of 15 feet, at the least, from a dwelling house or public building in which any person may be, or may be intended to be, employed in any manufacture, trade, or business.

SEC. 134. *Method of constructing cesspools.*—That every person who shall construct a cesspool in connection with any building within this city shall construct such cesspool of good brickwork, properly laid, at least 4 inches thick, and shall cause such cesspool to be arched with brick or covered with a flagstone or flagstones so that the same shall be properly and tightly covered.

SEC. 135. *Notice to clean cesspools.*—That the owner, lessee, or occupier of any premises within this city shall cleanse every cesspool belonging to such premises and remove the contents therefrom upon notice in writing to that effect from this board whenever in the opinion of this board it shall be necessary so to do in order to prevent or abate a nuisance. And every such occupier or owner or lessee who shall neglect or refuse to cleanse any such cesspool for two days after such written notice to that effect shall forfeit and pay a penalty hereinafter prescribed.

SEC. 136. *Limitation of contents of cesspool.*—That the owner, lessee, or occupier of any premises within this city shall not allow the contents of any cesspool belonging to such premises to rise within 1 foot of the top thereof.

SEC. 137. *Privies—How constructed.*—That every person who shall construct a privy within this city shall construct such privy at a distance of 15 feet at least from a dwelling house or public building, or any building in which any person may be, or may be intended to be employed, in any manufacture, trade, or business, and at least 5 feet distant from the line of every adjoining street, alley, court, or public or private passageway, and at least 2 feet from party lines. And every privy now located within a distance of 15 feet from a dwelling house or public building, or any building in which any person may be, or may be intended to be, employed in any manufacture, trade, or business, and within a distance of 5 feet from the line of every street, alley, court, or public or private passageway, shall be moved to a greater distance than 15 feet from said dwelling house or building, and 5 feet from every street, alley, court, or public passageway. And every privy vault within said distance shall be cleaned and filled up when in the judgment of the board of health it may be declared a nuisance.

Sec. 138. *Privy not to be constructed near potable water.*—That every person who shall construct a privy within this city shall not construct such privy within the distance of 25 feet from any stream of water or well which is used for domestic purposes or otherwise in such a position as to endanger the pollution of such water.

Sec. 139. *Method of cleansing privies.*—That every person who shall construct a privy within this city shall construct such privy in such position as to afford ready means of access thereto for the purpose of cleansing such privy and of removing filth therefrom; and such privy vault shall be constructed of good brick, with sides and bottom in cement at least 8 inches thick, properly rendered inside with cement and made watertight.

Sec. 140. *Ventilation of privies.*—That every person who shall construct such privy within this city shall provide such privy with a sufficient opening for ventilation as near to the top as practicable and communicating with the external air.

Sec. 141. *Privy not to communicate with drain.*—That every person who shall construct a privy within this city shall not cause or suffer any part of the space under the seat of such privy or any part of any receptacle for filth or in connection with such privy to communicate with any drain.

Sec. 142. *Notice to cleanse privies.*—That the owner, lessee, or occupier of any premises within this city shall cleanse every privy belonging to such premises and remove the contents therefrom upon notice in writing to that effect from this board whenever in the opinion of this board it shall be necessary so to do in order to prevent or abate a nuisance. And every such owner or occupier who shall neglect or refuse to cleanse any such privy for two days after such written notice to that effect shall forfeit and pay a penalty hereinafter named.

Sec. 143. *Limitation of contents.*—That the owner, lessee, or occupier of any premises within this city shall not allow the contents of any privy vault belonging to such premises to rise within 1 foot of the top thereof.

Sec. 144. *Removal and cleaning privy.*—That the owner of any privy in the city of Trenton, situated on premises abutting on a street of said city in which a sewer is laid for the purpose of carrying off the sewage of such city, shall clean, remove, and fill up all privy vaults on said premises or connect the same with said sewer, with a closet properly placed therein, whenever in the judgment of the board of health of said city it shall be necessary for them so to do; and any such owner who shall not within 30 days after notification in writing or printing by the board of health, through the health officer of the city of Trenton, make such aforesaid connection, or clean, fill up, or remove said privy vaults as aforesaid, shall forfeit and pay a penalty of $25 for every such offense and an additional fine of $10 for each and every day after the said 30 days in which the provisions of this section and of said notice shall not be complied with; and in case such owner shall reside out of the State or can not be found, the posting of said written notice upon said house or building shall be considered sufficient notice. [Article III, sanitary code, adopted Aug. 1, 1910.]

Sec. 84. *Scavengers.*—That no person shall engage in the business of cleaning, emptying, and removing, or shall clean, empty, or remove the contents of any necessary, privy vault, sink, or cesspool in the city of Trenton, except by the permission and under the supervision and control of the board of health.

Sec. 85. That no permit, as required in the foregoing section, to be issued to any person, shall in any case be issued until there have been paid at the office of the said board of health for the issuing thereof and for the supervision and control of said business the sum of $20.

Sec. 86. That each permit so to be granted, as set forth in the two preceding sections, shall continue for the term of one year from the 1st day of the preceding January: *Provided*, That any person taking out such permit after the 1st day of January in any year shall be required to pay for such permit only for that portion of the calendar year which said license has to run: *Provided*, That if any person licensed as aforesaid, or any of his employees, servants, or agents shall violate any ordinance or rule of the board of health in cleaning any cesspool or privy vault or in removing the contents thereof, such license may, at the discretion of the board, be revoked.

Sec. 87. That every person engaged in the business of removing the contents of necessaries, privy vaults, sinks, or cesspools in this city, where such contents are to be carried through any public streets or highway of said city, shall use in such business a suitable conveyance for the carrying of such contents provided with watertight tanks or boxes, with close-fitting lids or covers, or some other suitable conveyance, to be first approved for such use by this board.

SEC. 88. That no person so licensed and engaged in the business or employment of cleaning and emptying any necessary, privy vault, sink, or cesspool, or removing the contents thereof, shall clean or empty any such necessary, privy vault, sink, or cesspool, or remove the contents thereof without in each particular case first having obtained from the board of health a permit for such cleaning, emptying, or removing.

SEC. 89. That every scavenger, or person so licensed and engaged in the business and employment of cleaning and emptying necessaries, privy vaults, sinks, and cesspools and removing the contents thereof shall, upon receipt of an order signed by the health officer, stating the necessity for the immediate cleaning or emptying of any necessary, privy vault, sink, or cesspool in this city and the removal of the contents thereof, perform such work within 24 hours after the receipt of such order: *Provided*, That the owner, lessee, or occupant of said premises on which such necessary, privy vault, sink, or cesspool is situated, or the board of health, shall express willingness to pay for such services the usual fee allowed for such work.

SEC. 90. That no privy vault, cesspool, or underground receptacle for filth shall be hereafter erected or built on any lot or premises abutting on any street in which a public sewer is laid, but proper water-closets, school sinks, or some means approved by this board shall be provided which shall discharge into said sewer, and no such water-closet or school sink shall be allowed.unless provided with a flow of water sufficient to wash all filth into the public sewer. [Art. I, Sanitary Code adopted Aug. 1, 1910.]

READING, PA.

NUISANCES.

RULE 1. Any noisome matter, whether vegetable, animal, or otherwise, any reservoir of stagnant water or other nuisance or unwholesome thing in this city, which, according to the opinion of the board, may be the cause of or may occasion disease shall be abated, removed, emptied, or remedied by the person or persons upon whose property the same exists.

RULE 2. No person shall be allowed to throw or run into any street, lane, or alley, place, basin, or sewer, or into any standing water or excavation, or near to any dwelling house, or upon the grounds or premises in his or her possession, or upon the grounds or premises of any other person, any sewage or contents of cesspools, butchers' offal, blood or bloody water, skins, noisome or offensive rags, dead animals, putrid or stinking matter of any kind whatsoever, nor shall any person be permitted to carry on within the limits of the city any trade or manufacture that shall corrupt the air by offensive smell detrimental to the comfort or health of its inhabitants. Nor shall the rendering or steaming of any animal or vegetable product or substance generating noisome or unwholesome odors or gaseous vapors be permitted, unless the same be conducted in steam-tight kettles, tanks, or boilers, and such methods adopted as will entirely condense, decompose, deodorize, or destroy the vapors, odors, and gaseous products. Nor shall any bones, hides, fish, offal, or other animal or vegetable matter or substance, in a decomposed or offensive condition, be carried through the city in any other than covered and inclosed vehicles or in covered receptacles.

RULE 3. If any of the said nuisances as stated in rules 1 and 2 are caused or produced by any person or persons other than those on whose premises the said nuisances are caused or produced, by water, filthy, noisome, or unwholesome matter flowing or running from the premises of which he, she, or they may be the occupants, the same shall be removed, cleansed, abated, and remedied by the person or persons causing or producing such nuisance, or their agents, or by the person or persons owning or occupying the premises from which the same shall flow or run.

RULE 4. If any person shall, after notice by the board of health, neglect or refuse to abate a nuisance, the health commissioner may proceed to abate the nuisance complained of and the board of health shall collect the costs and expenses thereof from the owner of the premises from which the nuisance shall be removed, or from any person or persons causing or maintaining the same, in addition to such penalty as may be imposed under the rule applicable to such case.

RULE 5. Every person keeping any oyster house, cellar, or fish stand, or owning or occupying as a tenant any place whereat oysters, clams, fish, or other articles liable to decay, are sold, shall be required to remove the shells or other refuse matter from their houses, cellars, places, or premises at least twice in each and every week during the months of May, June, July, August, September, and October, between the hours o f 10 o'clock p. m. and 6 o'clock a. m., or oftener, if so directed. Nor shall any person be permitted to place upon the streets and sidewalks any shells or refuse matter, or suffer them to become noisome or offensive, while in or on their premises, and injurious to the health of the public.

Rule 9. The raising and keeping of hogs within the corporate limits of the city of Reading is prohibited, and the keeping of one or more hogs within the said city is hereby declared a nuisance, and any person found maintaining such nuisance shall be forthwith proceeded against for violation of the rules of this board.

Rule 33. *Complaints.*—Whenever any citizen of the city of Reading is desirous of lodging information of the existence of a nuisance in any part of the city, he or she shall be required to lodge such complaint at the office of the board of health or with the health commissioner, in writing, over his or her signature, such complaint to designate the nature of the nuisance, location thereof, and the name of the owner of the property upon which it is alleged to exist. [Regulations, board of health, adopted May 15, 1911.]

ST. LOUIS, MO.

NUISANCES—INSPECTION OF PREMISES.

Section 1. Section 632 of the Revised Code of St. Louis is hereby repealed, and there is enacted in lieu thereof a new section to be known as section 632 of the Revised Code of St. Louis, as follows:

Sec. 632. The members of the police force and such officers, agents, and employees as are appointed by the health commissioner, with the approval of the board of health, are hereby authorized to enter, inspect, and examine all buildings and parts of buildings and other premises within the city for the purpose of inspecting the sanitary condition thereof and for the purpose of the discovery and abatement of nuisances therein. If any such member of the police force, or any such officer, agent, or employee shall find any nuisance whatever in or upon any such buildings, parts of buildings, or other premises, he shall report the same immediately to the board of health, unless the owner, occupant, or agent of such premises immediately cause the same to be remedied. Any person or persons who shall in any manner interfere with, hinder, or obstruct any such member of the police force or any other such officer, agent, or employee so appointed by the health commissioner in the exercise of the said authority or duty of said officer, agent, or employee, as provided by this article, or who shall refuse to any such member of the police force or to any such officer, agent, or employee admission or entry to such premises after demand made by such officer, agent, or employee in the exercise of his authority or duty, as prescribed by this article, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in a sum not less than $20 nor more than $100. [Ordinance adopted July 11, 1910.]

SYRACUSE, N. Y.

NUISANCES—DEFINITION AND ABATEMENT.

Sec. 4, Subd. A. *Nuisances defined.*—Whatever is dangerous to human life or health; whatever building or part thereof is overcrowded or not provided with adequate means of ingress and egress or is not sufficiently supported, ventilated, sewered, lighted, or cleaned, and whatever renders soil, water, food, or air impure and unwholesome are declared to be nuisances and to be illegal; and every person having aided in creating or contributing to the same or who may support, continue, or retain any of them shall be deemed guilty of violation of this ordinance and shall also be liable for the expenses of the abatement or remedy required.

Subd. B. *Removal of nuisances.*—If the owner or occupant of any premises whereon any nuisance or condition deemed to be detrimental to the public health exists or is the cause of the existence elsewhere fails to comply with any order or regulation of the commissioner for the suppression or removal of any such nusiance or other matter in the judgment of the commissioner detrimental to the public health, the commissioner may enter upon the premises to which such order or regulation relates and suppress or remove such nuisance or other matter. The expense of such suppression or removal shall be paid by the owner or occupant of such premises, or by the person who caused or maintained such nuisance or other matters, and the commissioner may maintain an action in the name of the city to recover such expense, and the same when recovered shall be paid to the treasurer of the city, to be held and used as the fund of the city. Whenever the suppression or removal of such nuisance or conditions detrimental to health demand the immediate expenditure of money, the commissioner shall be authorized to use for such purpose any money available for that purpose, or may call upon the common council for such money, or may borrow the same on the credit of the city. All such moneys so expended or borrowed shall be immediately repaid to the fund or source whence they were received on the recovery of the same by action or otherwise from the persons responsible for the expenses of suppression or removal

Subd. C. *Expense of abatement of nuisances a lien upon the premises.*—If execution upon a judgment for the recovery of the expense of the suppression or removal of a nuisance or other matter, pursuant to an order or regulation of the commissioner, is returned wholly or in part unsatisfied, such judgment is docketed in the place and manner required by law to make a judgment of a court of record a lien upon real property, shall be a first lien upon such premises, having preference over all other liens and incumbrances whatever. The commissioner may cause such premises to be sold for a term of time for the payments and satisfaction of such lien and for the expense of the sale. Notice of such sale shall be published for 12 weeks successively at least once in each week in a newspaper of the city. If the owner or occupant of the premises, or his agent, is known, a copy of such notice shall be served upon him, either personally at least 14 days previous to the sale, or by mail at least 28 days prior thereto. The premises shall be sold to the person offering to take them for the shortest time, paying the amount unpaid on such judgment and interest and the expenses of such notice and sale. A certificate of sale, signed and acknowledged by the commissioner, shall be made and delivered to the purchaser and may be recorded as a conveyance of real property, and the purchaser shall thereupon be entitled to the immediate possession of such premises, and, if occupied, may maintain an action or proceeding to recover the possession thereof against the occupant, or against a tenant of real property holding over after the expiration of his term; and that the cost of any such action or proceeding, if not paid by the occupant, shall also be a lien upon such premises, having the same preference as the lien of such judgment, and the right of the purchaser to such premises shall be extended a longer term, which shall bear the same proportion to the original term as the amount of such costs bears to the amount paid by the purchaser on such sale. The term of the purchaser at any such sale shall commence when he shall have acquired possession of the premises sold. At any time within six months after recording such certificate the owner of the premises or any lessee, mortgagee, or encumbrance thereof, or any part of the same, may redeem the premises or any such part from such sale by paying to the purchaser the amount paid by him on the sale and all costs and expenses incurred by him in any action or proceeding to recover possession with interest at the rate of 10 per cent per annum thereon. If redemption is made by the owner, the right of the purchaser shall be extinguished; if by a lessee, the amount paid shall be applied as a payment upon any rent due, or which may accrue upon his lease; if by a mortgage, or an encumbrancer, the amount paid shall be added to his mortgage, encumbrance, or other lien, or if he have more than one, to the oldest, and shall thereafter be a part of such mortgage, lien, or encumbrance and enforceable as such. [Ordinance adopted Mar. 27, 1911.]

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay 8,898 acres of land in Alameda County were covered with poison during the week ended December 16, 1911.

During the same period 11,080 acres of land in San Joaquin County and 8,360 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June, 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkley	Dec. 16, 1911	1	[1] 148	91	
Oakland	do	38	[2] 614	444	
Fresno	do		[3] 100	100	
San Francisco	do	13	[4] 1,495	1,103	
Counties—					
Fresno	do		[5] 38	38	
Santa Clara	do		[6] 81	81	
Stanislaus	do		[7] 26	26	
Washington:					
City—					
Seattle	do		937	809	

[1] Identified: Mus norvegicus, 92; Mus musculus, 56.

[2] Identified: Mus norvegicus, 527; Mus rattus, 2; Mus musculus, 83; Mus alexandrinus, 2.

[3] Identified: Mus norvegicus, 762; Mus rattus, 189; Mus musculus, 383; Mus alexandrinus, 161

[4] Identified: Mus alexandrinus, 83; Mus musculus, 4; species not determined, 13.

[5] Identified: Mus alexandrinus, 38.

[6] Identified: Mus norvegicus, 81.

[7] Identified: Mus alexandrinus, 24; Mus musculus, 2.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Shot or trapped.	Found dead.	Examined.	Found infected.
California:					
Counties—					
Alameda	Dec. 16, 1911		104		
San Joaquin	do	68		68	
Stanislaus	do	42		42	
Total		110	104	110	

OTHER ANIMALS COLLECTED AND EXAMINED.

Places.	Week ended—	Animals collected.	Examined.	Found infected.
California:				
City—				
San Francisco	Dec. 16, 1911	1 gopher	1	
Counties—				
San Joaquin	do	7 rabbits	7	
Stanislaus	do	4 rabbits	4	
Total			12	

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED JAN. 5, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Flordia:				
Counties—				
Columbia	Dec. 3-9	8		
Jackson	do	37		
Palm Beach	do	2		
Sumter	Dec. 17-23	2		
Total for State		49		
*Louisiana:				
New Orleans	Dec. 18-24	2		
*Missouri:				
Kansas City	Nov. 1-30	11	1	
Montana:				
Counties—				
Cascade	Aug. 1-31	2		
Chouteau	do	7		
Lincoln	do	1		
Yellowstone	do	1		
Total for State		11		
New York:				
Counties—				
Albany	Nov. 1-30	1		
Allegany	do	1		
Cattaraugus	do	11		
Erie	do	3		
New York	do	5		
Wyoming	do	3		
Total for State		24		
South Dakota:				
Counties—				
Brookings	Nov. 1-30	1		
Minnehaha	do	12		
Turner	do	33		
Yankton	do	1		
Total for State		47		

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED DEC. 16, 1911.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	214	22	1	12	....	37	....	....	....	32	28	22	1
Boston, Mass	670,585	230	46	4	65	1	28	....	....	....	62	27	10	2
Chicago, Ill	2,185,283	615	158	19	75	1	104	1	....	....	185	76	30	7
Cleveland, Ohio	560,663	149	38	6	17	1	35	3	....	....	28	20	6	....
New York, N. Y	4,766,883	1,402	237	14	406	11	225	9	....	....	463	152	105	13
Philadelphia, Pa	1,549,008	520	84	7	14	3	46	3	....	....	90	61	19	7
Pittsburgh, Pa	533,905	175	26	4	14	....	25	....	1	....	....	16	14	5
St. Louis, Mo	687,029	205	20	1	11	....	17	....	1	....	48	19	6	1
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	140	24	1	19	....	18	1	....	....	12	12	12	....
Cincinnati, Ohio	364,463	128	8	....	4	....	30	1	5	....	25	13	1	....
Milwaukee, Wis	373,857	69	12	....	28	....	34	....	....	....	14	5	14	....
Newark, N. J	347,469	115	38	2	....	1	21	....	....	....	27	16	6	2
New Orleans, La	339,075	155	11	1	1	....	17	....	....	....	35	14	4	1
San Francisco, Cal	416,912	163	4	....	129	....	10	....	....	....	32	19	5	1
Washington, D. C	331,069	121	8	....	3	....	2	....	....	....	23	....	11	5
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	77	22	3	4	....	6	....	5	....	....	11	....	....
Jersey City, N. J	267,779	89	....	1	....	....	....	....	....	....	....	14	....	....
Providence, R. I	224,326	71	21	1	18	....	6	....	3	....	....	2	2	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	24	6	....	....	....	3	....	....	....	4	6	....	....
Cambridge, Mass	104,839	27	7	....	2	....	2	....	....	....	4	3	....	....
Dayton, Ohio	116,577	29	3	....	....	....	....	....	....	....	1	1	1	....
Fall River, Mass	119,295	19	3	1	....	....	....	....	....	....	4	3	....	....
Grand Rapids, Mich	112,571	30	4	....	1	....	5	....	....	....	6	....	4	....
Lowell, Mass	106,294	38	9	1	30	2	11	....	....	....	2	6	1	1
Nashville, Tenn	110,364	42	1	....	....	....	4	....	....	....	3	4	6	....
Omaha, Nebr	124,096	27	5	....	....	....	4	....	....	....	1	1	....	....
Toledo, Ohio	168,497	44	7	1	1	....	10	....	....	....	24	4	5	2
Worcester, Mass	145,986	40	3	1	1	....	16	....	....	....	6	2	1	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	8	2	....	....	....	2	....	....	....	1	2	1	....
Bayonne, N. J	55,545	....	7	1	3	....	6	....	....	....	1	1	....	....
Brockton, Mass	56,878	19	....	....	13	....	....	....	....	....	2	....	....	1
Camden, N. J	94,538	7	4	....	....	....	2	....	....	....	1	....	....	....
Duluth, Minn	78,466	15	....	....	....	....	1	....	3	....	2	1	2	1
Elizabeth, N. J	73,409	11	1	....	4	....	2	1	....	....	2	2	2	1
Erie, Pa	66,525	18	8	....	1	....	3	....	....	....	1	3	1	1
Evansville, Ind	69,647	11	3	....	....	....	1	....	....	....	....	3	7	1
Harrisburg, Pa	64,186	20	14	1	1	....	....	....	....	....	3	4	1	....
Hartford, Conn	98,915	35	8	....	3	....	10	....	....	....	1	1	2	1
Hoboken, N. J	70,324	6	....	....	....	....	1	....	....	....	5	....	....	....
Houston, Tex	78,800	35	1	1	....	....	2	....	....	....	....	....	....	1
Johnstown, Pa	55,482	18	4	....	....	....	8	1	....	....	6	1	....	....
Kansas City, Kans	82,331	....	4	....	....	....	....	....	....	....	2	....	1	....
Lawrence, Mass	85,892	19	6	....	....	....	2	....	....	....	3	3	4	....
Manchester, N. H	70,063	20	6	....	13	....	1	....	2	....	3	3	1	....
New Bedford, Mass	96,652	23	3	....	3	....	4	....	....	....	10	....	3	2
Oklahoma City, Okla	64,205	15	2	....	....	....	5	....	....	....	2	2	3	....
Passaic, N. J	54,773	15	1	....	1	....	....	....	....	....	....	1	....	....
Pawtucket, R. I	51,622	....	....	....	....	....	....	....	....	....	....	1	....	....
Portland, Me	58,571	29	1	....	....	....	6	....	....	....	....	1	2	1
Reading, Pa	96,071	25	3	....	1	....	7	....	....	....	....	1	2	1
San Antonio, Tex	96,614	29	3	....	1	....	7	....	....	....	....	8	1	....
Schenectady, N. Y	72,826	17	2	....	3	....	2	....	....	....	4	1	....	....
Springfield, Ill	51,678	16	2	....	....	....	1	....	....	....	....	3	....	....
Springfield, Mass	88,926	24	2	....	23	1	8	....	....	....	4	1	2	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Dec. 16, 1911—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria. Cases.	Diphtheria. Deaths.	Measles. Cases.	Measles. Deaths.	Scarlet fever. Cases.	Scarlet fever. Deaths.	Small-pox. Cases.	Small-pox. Deaths.	Tuberculosis. Cases.	Tuberculosis. Deaths.	Typhoid fever. Cases.	Typhoid fever. Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Terre Haute, Ind	58,157		6		1				1			2		
Trenton, N. J	96,815	32	4	1	1		2				1		12	1
Wilkes-Barre, Pa	67,105	28	5		77		3				5	1	1	
Wilmington, Del	87,411	26										5		1
Yonkers, N. Y	79,803	20	4		6		26				7	3		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	10	2				2							
Aurora, Ill	29,807	5	2											
Berkeley, Cal	40,434	10	2				1							
Binghamton, N. Y	48,443	22	1									1	2	
Brookline, Mass	27,792	9					2							
Butte, Mont	39,165	23	1				1					3		
Chattanooga, Tenn	44,604		2				3							
Chelsea, Mass	32,452	7							1	2				
Chicopee, Mass	25,401	3	1		1						2		1	
Danville, Ill	27,871	4	6	1			3							
Dubuque, Iowa	38,494	6	3	1										
East Orange, N. J	34,371	9	1				2							
Elmira, N. Y	37,176	11	1											
El Paso, Tex	39,279	22	1				1		6			4		1
Everett, Mass	33,484	3	2		1		3				2			
Haverhill, Mass	44,115	12	3		3		5				1			
Kalamazoo, Mich	39,437	14									1	1		
Knoxville, Tenn	36,346	11					1					1	1	
La Crosse, Wis	30,417	8	4	1			1		2		1	1		
Lancaster, Pa	47,227		6				2						1	
Lima, Ohio	30,508	1			1		2							
Lynchburg, Va	29,494	8	4		4		4						2	
Malden, Mass	44,404	12					1				5			
Mount Vernon, N. Y	30,919				18									
New Castle, Pa	36,280		14		2		1						17	
Newport, Ky	30,309	6	1				1		1					
Newton, Mass	39,806	6	1		4		1				1		1	
Niagara Falls, N. Y	30,445	18	3				2				1		8	
Norristown, Pa	27,875	11			4							2		
Orange, N. J	29,630	9	3	1	1		2				2	1		
Pittsfield, Mass	32,121	10	4				3				3			
Portsmouth, Va	33,190	13	2						1			1		1
Racine, Wis	38,002		1				2							
Roanoke, Va	34,874	16	11	2	7		2				1	3	4	
Rockford, Ill	45,401	20									[1] 2	1	9	
Salem, Mass	43,697	8			1		2				1			
San Diego, Cal	39,578		2				1				2	2		
South Omaha, Nebr	26,259	6	1								1	1		
Superior, Wis	40,384	12	6	1					8					
Taunton, Mass	34,259	15					5					1		
Waltham, Mass	27,834	10					2				2	1		
West Hoboken, N. J	35,403		1	1			3					1		
Wheeling, W. Va	41,641	10	6		3							1		
York, Pa	44,750		3	1							5		2	
Zanesville, Ohio	28,026	5	5		8		3				1		18	
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	8					1				2			
Beaver Falls, Pa	12,191	2	3										3	
Braddock, Pa	19,957	5	6											
Butler, Pa	20,782	9	1				1							
Cambridge, Ohio	11,327	4	1									1		
Camden, S. C		2												
Carbondale, Pa	17,040	7					2							
Clinton, Mass	13,075	5										1		
Coffeyville, Kans	12,687						1				1			
Columbus, Ind		2	1				2				1			

[1] Incomplete.

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Dec. 16, 1911—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants—Con.														
Concord, N. H	21,497	14										4		
Cumberland, Md	21,839	12	3										13	1
Galesburg, Ill	20,089	11	3				1		1					
Greensboro, N. C	15,895	8					3					1	1	1
Harrison, N. J	14,498	3	2								1	1		
Homestead, Pa	18,713	5	8	1										
Hyde Park, Mass	15,507	5					1							
La Fayette, Ind	12,081	8	1									1		
Lebanon, Pa	19,240		4											
Marinette, Wis	14,610	1			9								2	
Marlboro, Mass	14,479	5	1									1		
Massillon, Ohio	13,879	2	1				1							
Medford, Mass	23,150	1	1		1		1				1			
Melrose, Mass	15,715	2					1							
Moline, Ill	24,199	5			1						1	1	2	
Montclair, N. J	21,150	1	1				2				2		1	
Morristown, N. J	12,507	4												
Nanticoke, Pa	18,857	2			19									
Newburyport, Mass	19,940	4	3	1	1						4		1	
North Adams, Mass	22,019	8										1		
Northampton, Mass	19,431	7	1								1	1		
Ottumwa, Iowa	22,012	6												
Peekskill, N. Y		8	1				1					1		
Plainfield, N. J	20,550	4									1			
Pottstown, Pa		2												
Saratoga Springs, N. Y		5												1
South Bethlehem, Pa	19,973	2			8								2	
Steelton, Pa	14,246	2	10						3		3			
Wilkinsburg, Pa	18,924	5	3		1		7				1	1		

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

Florida.—Reports from the State board of health show as follows: Week ended December 9, 1911. Diphtheria present in 4 localities with 10 cases, malaria in 4 localities with 11 cases, smallpox in 3 counties with 47 cases, tuberculosis in 6 localities with 8 cases, typhoid fever in 5 localities with 9 cases.

Week ended December 16, 1911. Diphtheria present in 3 localities with 6 cases, malaria in 5 localities with 13 cases, tuberculosis in 7 localities with 12 cases, typhoid fever in 10 localities with 13 cases.

Indiana.—Month of October, 1911. Population, 2,700,876. Total number of deaths from all causes 2,674, including diphtheria 68, measles 1, scarlet fever 7, tuberculosis 285, typhoid fever 91. Cases reported: Diphtheria 2,437 in 69 counties, smallpox 13 in 5 counties, tuberculosis 285, typhoid fever 642 in 72 counties.

Michigan.—Month of November, 1911. Population, 2,810,873. Cases of communicable diseases reported: Diphtheria 439, measles 87, scarlet fever 380, smallpox 13, tuberculosis 113, typhoid fever 182.

FOREIGN AND INSULAR.

ALGERIA.

Plague at Philippeville.

Vice Consul Mason at Algiers reports, December 8: Eight cases of plague with two deaths have been reported at Philippeville, a small port in Algeria. The cases occurred October 19 and November 11, respectively.

Plague was reported at Philippeville about five years ago and it is believed that the recent outbreak is due to a source of infection left from the previous epidemic as no vessel from oriental ports has touched at Philippeville. The only vessels arriving at that port are from European ports. Active measures of rat destruction have been taken at Philippeville.

CUBA.

Transmissible Diseases.

The following statement of transmissible diseases in the island of Cuba was issued by the National Department of Sanitation:

MONTH OF NOVEMBER, 1911.

	New cases.	Deaths.	Remaining under treatment.
Tuberculosis	134	221	1,872
Leprosy	5	1	351
Malaria	198	14	179
Typhoid fever	112	22	86
Diphtheria	71	11	15
Scarlet fever	3	1	3
Measles	68	2	43
Varicella	5		5
Epidemic dysentery			6
Rabies	1	1	
Tetanus in new born	21	19	1
Filariasis			2
Dengue	1		
Icterus gravis	1		1

No quarantinable diseases were reported during the week ended December 16.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910.

At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911.

The last plague-infected rat was found at Honokaa December 18, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports, December 11:

Week ended Dec. 9, 1911.

Total rats and mongoose taken	486
Rats trapped	475
Mongoose trapped	11
Rats examined bacteriologically	426
Classification of rats trapped:	
Mus alexandrinus	96
Mus musculus	87
Mus norvegicus	30
Mus rattus	262
Average number of traps set daily	1,720

Plague-Infected Rat Found at Honokaa.

Dr. Ramus reported December 27 that a plague-infected rat was found at Honokaa, December 18.

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports, November 30: During the week ended November 11, 39 deaths from cholera and 6 from plague were reported in Calcutta; in all Bengal, 146 cases of plague with 122 deaths; in all India, 10,213 cases of plague with 7,659 deaths.

ITALY.

Status of Cholera.

According to the official bulletin issued by the Italian Government, 77 cases of cholera with 39 deaths were reported throughout the entire Kingdom during the period from November 19 to 25, 1911. These figures show a decrease of 17 cases with 12 deaths from the number reported during the previous week. The Provinces of Catania, Cagliari, and Trapani have been declared free from cholera. The Provinces previously declared immune are Bari, Palermo, and Sassari.

Naples—Examination of Emigrants.

Surg. Geddings reports, December 12:

Vessels inspected during the week ended December 9, 1911.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Dec. 5	Principe di Piemonte	New York	292	65	380
6	Hamburg	do	346	110	520
6	Carpathia	do			
7	Italia	do	233	55	290
8	Prinzess Irene	do	669	170	1,020
9	Madonna	do	691	155	870
	Total		2,231	555	3,080

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Dec. 4	Principe di Piemonte	New York	230	75	175
5	Carpathia	do			
6	Oceania	do			
7	Hamburg	do	43	60	125
8	Italia	do	362	160	300
9	Prinzess Irene	do	115	100	200
	Total		750	395	800

Inspection of baggage—Second-cabin baggage.

NAPLES.

Date.	Name of ship.	Inspected.	Disinfected.
Dec. 5	Principe di Piemonte		
6	Hamburg	60	220
6	Carpathia	25	85
7	Italia		
8	Prinzess Irene	75	160
9	Madonna		
	Total	160	465

PALERMO.

Dec. 4	Principe di Piemonte	30	80
5	Carpathia	20	35
6	Oceania	80	200
7	Hamburg	50	150
8	Italia	12	8
9	Prinzess Irene	65	80
	Total	257	553

MALTA.

Declared Free from Cholera.

According to information received from the American consul, December 23, Malta has been declared free from cholera.

MEXICO.

Yellow Fever at Merida.

During the two weeks ended December 23, 1911, yellow fever was reported at Merida as follows: Week ended December 16, 1 case with 1 death; during the week ended December 23, 1 case. The total number of cases reported from August 1 to December 23, 1911, was 49 with 25 deaths.

PHILIPPINE ISLANDS.

Cholera.

Acting Chief Quarantine Officer Fox at Manila reports, November 14: During the week ended November 4, 1911, 5 cases of cholera, with 5 deaths, were reported in the Province of Union.

Plague on Steamship at Cebu.

Dr. Fox further reported November 4 that a case of pneumonic plague was found on the steamship *Montrose* at Cebu from Shanghai.

Information Regarding Quarantine Procedures.

The chief quarantine officer for the Philippine Islands on October 20, 1911, issued the following circular regarding quarantine procedures for vessels entering and leaving ports of the Philippine Islands:

INFORMATION FOR OWNERS, AGENTS, SHIPPERS, MASTERS OF VESSELS, AND OTHERS CONCERNED RELATIVE TO QUARANTINE PROCEDURES FOR VESSELS ENTERING AND LEAVING PORTS IN THE PHILIPPINE ISLANDS.

In order that the provisions of the United States quarantine laws and regulations in force in the Philippine Islands may be better understood the following information is hereby published. Nothing in these rules, however, whether by omission or otherwise, is to be construed as exempting a vessel from complying with the United States quarantine laws and regulations.

PROCEDURE IN FOREIGN PORTS PRIOR TO SAILING FOR THE PHILIPPINES.

1. Before cargo for the Philippine Islands can be placed aboard a vessel a descriptive boat note of each article must be presented at the American consulate for approval. Bundles of rags, old newspapers, and similar articles can not be shipped. Particular care must be taken that cargo is properly packed and can not serve as hiding or nesting places for rats or fleas. Hides must be disinfected with a solution of bichloride of mercury before shipment and a certificate of such disinfection must be obtained and sent to the Philippines.

2. American bills of health and manifests of cargo must be countersigned by the consular surgeons or consuls at the foreign ports in which such officers are stationed.

3. Under the provisions of Customs Administrative Circular No. 628, of the Philippine Government, all shipments of meat and meat products must be accompanied by certificates of competent ante and post mortem veterinary inspection. Furthermore, these certificates must be viséed at the port of shipment by officers of the Public Health and Marine-Hospital Service, whenever there is one available, and if not, by the American consuls.

4. Cabbage, celery, radishes, lettuce, and other low-growing vegetables eaten raw and coming from China and Japan can not be shipped to the Philippine Islands.

5. Dogs from Japan and China need not be accompanied by certificates of noninfection, but will be subjected to cresol baths before permits for their landing will be issued by the quarantine service in the Philippines.

6. An American bill of health in duplicate must be obtained from the American consulate at each and every port touched. Masters of vessels are cautioned against departing from a foreign port with an inaccurate bill of health. Discrepancies between the number of persons actually counted upon arrival in the Philippines and the number entered upon the bill of health may subject the vessel to detention while the master's statements are verified by cable communication with the various ports at which he has called.

7. Vessels coming direct from foreign ports to ports in the Philippine Islands must fly the "Q" flag, anchor in a position designated by the harbor master or the chief pilot, and await quarantine inspection before permitting any vessel to come close enough to hold communication.

8. Vessels will be boarded only between the hours of sunrise and sunset.

9. Passengers will not be inspected in their staterooms, bath rooms, or toilets. Failure to comply with this requirement will subject the vessel to unnecessary delay.

10. Vessels not ordinarily subject to quarantine inspection will be required to fly the "Q" flag, anchor, and await quarantine inspection when deaths have occurred on board or suspicious illness exists.

11. When vessels not ordinarily subject to quarantine inspection have sickness of a suspicious nature on board, it is recommended that they call at the nearest quarantine station—Mariveles, Cebu, or Iloilo—for quarantine inspection. If the disease is of a nonquarantinable nature, the vessel will be granted pratique and permitted to proceed.

12. Vessels from foreign ports, which have undergone quarantine inspection at a Philippine port of entry, will not be required to await quarantine inspection upon arrival at the next Philippine port, provided:

(*a*) That a period of seven days has elapsed since leaving the last foreign port.

(*b*) That in case any illness has occurred aboard the vessel, the master will hoist the quarantine flag and await inspection prior to landing passengers, crew, or cargo.

(*c*) That within one hour after the vessel's arrival in port the master will file a certificate at the quarantine office to the effect that no illness has occurred on board during the preceding five days.

(*d*) That before departing from a Philippine port a bill of health be obtained from the quarantine office.

13. The following certificate of arrivals shall be submitted by vessels entering a Philippine port of entry without quarantine inspection:

....
(Name of port and date)

UNITED STATES QUARANTINE OFFICER,
.... *P. I.*

I have the honor to report that the ....
(Flag, rig, and name
.... from ....
of vessel) (Original port)
via ....
(Names of way ports in order)
to .... arrived in .... at ....
(Destination) (Port) (Time)
'clock ...... m.
Total number of crew, including officers..

Total number passengers landed:
Cabin..................................
Steerage..................................

Number of through passengers:
Cabin..................................
Steerage..................................

The vessel is in clean and sanitary condition, and there has been no sickness on board during the past five days.

....
(Master of the vessel)

14. Vessels coming from foreign ports at which cholera or plague is present shall have their crews and passengers bathed and their effects disinfected with steam, either at the port of departure or at Mariveles, Cebu, or Iloilo. In event that this procedure is impracticable the crews and passengers shall be kept on board for a period of seven days from the time of departing from the last foreign port, and in no event shall these persons come ashore in the Philippines until permission is granted by a medical officer of the quarantine service.

15. Cattle ships from plague-infected foreign ports shall not be permitted to come alongside docks in Philippine ports.

16. Animal manure from cattle ships may be discharged into the waters of Manila Bay at a distance of at least 5 miles from Sisiman and not nearer than 10 miles to Manila. (See Manila Customhouse General Order No. 199.)

SPECIAL REGULATIONS.

17. When plague in human or rodent form is present at a port and, in the opinion of the quarantine officer, the situation requires the application of unusual quarantine measures in the Philippines, besides the fumigation of the vessel, which may be required, the passengers shall be detained in quarantine until seven days have elapsed from the time of completing the disinfection or leaving the infected port. Such detention does not necessarily imply detention of the vessel, but usually refers to the passengers only.

18. When cholera exists at a port and, in the opinion of the quarantine officer, the situation requires the application of unusual quarantine measures in the Philippines, besides the routine measures demanded by the quarantine regulations, all passengers shall be subjected to a bacteriological examination for the cholera vibrio. Any person found to harbor the organism of cholera shall be held in quarantine until the organism disappears.

19. When smallpox exists at a port and, in the opinion of the quarantine officer, the situation demands the application of unusual quarantine measures in the Philippines, the passengers and crews of vessels coming from the port shall be vaccinated before being permitted to come ashore unless they show evidence of recent successful vaccination.

20. Interisland vessels bringing persons suffering with leprosy to Philippine ports will not be subjected to detention, but must submit prompt reports of the presence of such persons to the quarantine office, and in Manila to the bureau of health, in order that the lepers may be removed and their quarters disinfected.

PROCEDURE WHILE IN A PHILIPPINE PORT.

21. Upon proceeding to a dock, a vessel must observe certain precautions, the provisions of which are embodied in the pratique which is granted upon the completion of the quarantine inspection.

(*a*) The vessel must be fended off from the dock at least 6 feet at all points.

(*b*) All gangways and cargo chutes must be raised and all lighters and boats removed from alongside between sunset and sunrise. When vessels are discharging cargo during the night and gangways and cargo chutes are in use, watchmen must be stationed at these points to prevent the escape of rats.

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VESSELS IN THE PHILIPPINE ISLANDS.

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Fumigation is the destruction of rats, which are known plague.

ants, flies, and other undesirable insects and by fumigation.

from damage to cargo and ship equipment through reduced by fumigation.

is an excellent surface disinfectant and will aid in

WHEN VESSELS ARE FUMIGATED.

government as well as commercial, are required to be includes steamers, sailing vessels, launches, and

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OF FUMIGATION

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Fabrics and materials dyed with vegetable or aniline dyes are bleached and the fibers of linen and cotton goods are rotted by fumigation. Therefore, these articles should be removed beyond the action of the gas.

Bright metallic surfaces are blackened by fumigation, but this may be obviated by applying a coating of white lead, grease, or tallow to the exposed surfaces.

PREPARATION FOR FUMIGATION.

34. Arrangements for fumigation must be made at the quarantine office before noon of the day on which it is desired to have the work done. Fumigation can not be undertaken later than 5 o'clock p. m. and is preferably done on week days.

35. The following preparations must be made before notice of the readiness of a vessel for fumigation is given:

All cargo must be discharged.

The holds and compartments must be mechanically clean.

All ports and side doors must be tightly closed.

All ventilators must be tightly covered with thick tarpaulin.

All hatches, except one by the ladder leading down into each hold, must be placed in position over the holds.

All hatches must be tightly covered with two thicknesses of tarpaulin.

Five or more able seamen must be available for carrying and placing the pots and pans in the holds.

A quantity of water must be available for placing in the pans in the holds.

36. When all of these preparations have been completed, the "D" flag of the international code should be hoisted as a signal of readiness for fumigation.

PROCEDURE AFTER COMPLETION OF FUMIGATION.

37. At the expiration of 12 hours from the time of igniting the sulphur the fumigated compartments may be opened. The pots, pans, and other accessories belonging to the quarantine service should be removed from the compartments as soon as practicable and placed on deck near the gangway for collection by the quarantine launch.

CERTIFICATE SHOWING RESULTS OF FUMIGATION.

38. A certificate, properly accomplished and showing the results of fumigation, must be forwarded to the quarantine office.

DECLINATION OF VESSELS TO SUBMIT TO FUMIGATION.

39. Vessels evading fumigation upon the plea that they will not return to the Philippine Islands will be served with the following official notice:

> Before the steamer .... can again enter a port in the Philippine Islands it will be necessary to present a certificate stating that the vessel has been fumigated throughout with sulphur within one month prior to her arrival.
>
> This fumigation must be performed by competent officials and the certificate must be viséed by the American consul at the port in which the work is done.

METHOD OF SUMMONING A PHYSICIAN.

40. In cases of accident or sudden illness requiring the professional services of a physician, the "D" flag of the international code may be hoisted.

VESSELS BOUND FOR UNITED STATES PORTS.

41. Prior to loading cargo for ports in the United States or its dependencies vessels must be fumigated with sulphur.

42. Individual boat notes or bills of lading must be presented at the quarantine office for approval before cargo is placed aboard a vessel. The origin and sanitary history of bedding, personal effects, curios, and similar articles must be stated in detail.

43. Steerage passengers proceeding on the same vessel to ports in the United States must be bathed and their effects disinfected with steam prior to embarkation.

44. In accordance with a ruling of the Bureau of Animal Industry, United States Department of Agriculture, the importation into the United States of dogs from the Philippine Islands is prohibited.

45. Outgoing quarantine inspection is required only at the last Philippine port, but the cargo manifest at each port must be presented at the quarantine office for signature. All cargo manifests shall be presented at the last Philippine port for inspection as to signature at previous ports.

46. Just prior to the departure of a vessel from the last Philippine port, to a port in the United States, a quarantine officer will inspect the passengers and crew aboard the vessel. One hour before the time of sailing, when all members of the crew, all passengers, the bill of health, and the cargo manifest are on board, the "D" flag of the international code should be hoisted as a signal of readiness for the inspection. All hands will be mustered and inspected, the cargo manifest signed, and the bill of health properly accomplished. After the completion of the final inspection no further communication with shore will be permitted.

PROCEDURE DURING AN EPIDEMIC OF QUARANTINABLE DISEASE IN THE PHILIPPINE ISLANDS.

47. In case of an epidemic of a quarantinable disease in the Philippine Islands, interisland vessels and vessels bound for the United States may be subjected to outgoing quarantine detention and such disinfection of vessel, personal effects, bedding, etc., as may be deemed necessary before being permitted to sail.

VACCINATION OF CREWS OF INTERISLAND VESSELS.

48. Once a year all members of the crews of interisland vessels shall be vaccinated, unless they possess cards issued by the quarantine service stating that they have been successfully vaccinated during the previous year.

49. After a successful vaccination a blue card is issued, and it is recommended that the owners and masters of interisland vessels employ no persons who do not possess such cards, or that before employment they be sent to the quarantine office for vaccination.

Official:

(Signed) Carroll Fox,
Passed Assistant Surgeon,
Chief Quarantine Officer for the Philippine Islands.

October 20, 1911.

RUSSIA.

Comparative Sanitary Statistics.

The following statement was taken from the report of the commission of chief medical inspectors for the year 1909:

The death rate in European Russia was 28.9 per 1,000, which is 1.1 and 1.2 higher than in the years 1907 and 1908, and in comparison with the years 1897-1906, 1.4 lower.

The birth rate was the lowest in 20 years, being 43.8 per 1,000.

From acute infectious diseases there died 461,025 persons, as compared with 383,351 for the year 1908, and 354,117 for the year 1907. The greatest number of deaths were from the following causes in the order named: Typhus fever, diphtheria, scarlet fever, typhoid fever, whooping cough, smallpox, and measles.

The total number of persons who received medical aid during the year was 81,746,072, or 524 per 1,000 inhabitants, 981 per 1,000 in the cities and 451 in the country; 66.3 per cent of the registered sick were cared for by physicians and 33.7 per cent by army surgeons.

The medical personnel was as follows at the end of the year 1909: Doctors of medicine, 19,866; feldschers (army surgeons), 24,793; midwives, 13,039; pharmacists, 11,415; dentists, 5,703.

In the cities there is on an average one physician for every 1,500 persons; in the country, one for every 24,600. The hospitals number 7,053, with 193,139 beds. In all hospitals 2,932,189 persons were cared for, of which number 162,104 (5.5 per cent) died.

In the 21 Pasteur Institutes 28,379 persons were cared for. One hundred and ten persons died during or after the treatment. The number of persons vaccinated for the first time was 6,439,696; persons revaccinated, 1,579,227.

VENEZUELA.

Yellow Fever at Caracas.

Acting Asst. Surg. Stewart, at La Guaira, reports December 16: During the week ended December 8, 2 cases of yellow fever were reported at Caracas.

Establishment of a National Office of Sanitation.

By executive order the President of the United States of Venezuela on November 13, 1911, directed the creation of a national office of sanitation. The following is a translation of the decree:

Gen. J. V. Gomez, President of the United States of Venezuela, considering:

That in order to be made efficacious for the public health, sanitary measures must be established with perfect scientific rigor and practice and in a regular way, stable and uniform throughout the country:

Considering:

That the Republic, as well for its foreign relations as for its internal development and the fostering of immigration, needs sanitary conditions beyond reproach;

Decrees:

Article 1. An office of national sanitation is created under the orders of which will act an institute of hygiene, composed of a laboratory of bacteriology, one of parasitology, and one of biological chemistry; a veterinary department, and a central station of disinfection.

This office shall establish other subordinate offices with the proper personnel in those parts of the Republic where the service of sanitation requires it.

Art. 2. For its control and action the national office will depend upon the President of the Republic, whose orders shall be countersigned by the proper minister, according to article 100 of the national constitution.

Art. 3. The personnel of the national office shall consist of a director, a subdirector, who shall be a technical bacteriologist, an engineer, a biological chemist, a veterinarian, an inspector general, two technical assistants, a secretary, who shall be a stenographer, and two laboratory attendants.

Art. 4. The personnel of the central station of disinfection shall be composed of a chief medical officer, who shall be a bacteriologist, an administrator, a porter, two disinfectors, two drivers, and two firemen.

Art. 5. The Federal Executive shall name the director, and on his recommendation the technical employees and principals of the office of national sanitation. The director shall make the other appointments with the previous approval of the former.

Art. 6. The director is empowered to contract abroad, with the previous approval of the executive, for the technical employees whom the institute and the central office of disinfection may need.

Art. 7. The building occupied by the bureau of telegraphs is temporarily assigned for the establishment of the office of national sanitation.

Art. 8. The apparatus, instruments, machines, needful furniture, equipment, and records now used by the bureau of hygiene and public health shall form a part of the office of national sanitation, as shall also everything acquired for this service in the future.

Art. 9. The Executive shall construct for the institute as soon as possible, according to plans presented by the director, a suitable building, which shall be provided with the necessary apparatus, equipment, and tools.

Art. 10. The institutions of charity, the leper hospitals, the hospitals for the insane, other hospitals, lazarettoes, aqueducts, sewers, and street pavements in the Federal District, as well as in the States and Territories of the Union, shall be under the immediate and direct control of the office of national sanitation for the purpose of disinfection and sanitation.

Art. 11. In conformity with the studies, decisions, and regulations of the office of national sanitation practicable construction, extension, and modification of aqueducts, sewers, pavements, and other works in the province of sanitary engineering shall be undertaken in order to improve with the required speed the ports of La Guaira, Puerto Cabello, Maracaibo, Tucacas, La Vela, Cumana, Rio Caribe, Cristobal Colon, Guiria, Irapa, Imataca, Ciudad Bolivar, and others, fluvial as well as maritime, and also the other cities of the Republic.

Art. 12. The ministries, presidents of States councils, Territorial governments, frontier authorities, military comma ficers, and other bodies officers shall have recourse to this sole ty for consultation in matters.

The office of national sanitation is empowered to create, approve, introduce, and authorize special procedures to assure the harmlessness of the chief food products and also to regulate the sale of them.

Art. 13. Food products from within and without the country, of whatever class, shall be submitted to the experts of the office of national sanitation for their inspection and examination and shall not be offered to dealers or for consumption without the previous approval of the said office.

Art. 14. The office of national sanitation shall formulate regulations and ordinances of sanitation and health, which shall be submitted to the Federal Executive for his approval.

Art. 15. The Federal Executive shall request of transportation companies operating on land, rivers, and sea the free transportation of the employees and apparatus of the office of national sanitation in the exercise of their functions.

Art. 16. The office of national sanitation shall draft a system of laws and regulations for the centralization of the service, and the unification of sanitary legislation in the country and its codification, which shall be presented to the National Congress through the proper channel.

Art. 17. For the service, maintenance, and better realization, of the object, the revenue from the tax established by the decree of December 29, 1910, and that part of the budget called duties for hygiene and health are set aside.

Art. 18. In the national treasury a separate account shall be kept of the items mentioned in the preceding article, the receipts from which shall be in charge of the corporation, institution, or person designated by the Executive, and the office of national sanitation shall draw in every case through the proper minister, and shall send monthly vouchers to the minister of finance and public credit for the legalization of the account.

Art. 19. The budget of the office of national sanitation shall be elaborated by the Federal Executive.

Art. 20. The national authorities as well as those of the States and municipalities shall give their immediate support to and shall exert themselves in giving, and causing to be given, strict compliance with the regulations, ordinances, and orders of the office of national sanitation.

Art. 21. All decrees, orders, resolutions, and regulations relating to hygiene, health, and disinfection now in force are repealed.

Given, signed, and sealed with the seal of the Federal Executive and subscribed by the ministers of executive business in the federal palace at Caracas November 13, 1911. Year 102 of independence and fifty-third of the federation.

(Signed) J. V. Gomez.

(Countersigned by members of the cabinet.)

CHOLERA. YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED JAN. 5, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

[For reports received from July 1, 1911, to Dec. 29, 1911, see Public Health Reports for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Bulgaria:				
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24-Oct. 9, 1911: Cases, 322; deaths, 256.
Batavia	Nov. 12-18	6	2	
India:				
Calcutta	Nov. 5-11		39	
Italy				Total Nov. 26-Dec. 2: Cases, 51; deaths, 34.
Provinces—				
Caltanisetta	Nov. 26-Dec. 2	2	2	
Girgenti	do	45	29	
Messina	do	3	2	
Syracuse	do	1	1	
Malta	Nov. 19-Dec. 2	4	4	Dec. 23 declared free from cholera.
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received during week ended Jan. 5, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	Nov. 19-Dec. 2		4	
Ecuador:				
Bucay	Nov. 16-30	2		
Guayaquil	do	8	4	
Milagro	do	1		
Mexico:				
Merida	Dec. 12-23	4	5	Total Aug. 1-Nov. 23: Cases, 42; deaths, 25.
Venezuela:				
Caracas	Nov. 16-Dec. 7	11		

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2896 Vol. XXVI.
Brazil:				
Rio de Janeiro	Nov. 12-18	2		
Chile:				
Iquique	Nov. 12-25	1	2	
Dutch East Indies:				
Java—				
Pasoeroean Residency, Malang District.	Nov. 12-18	6	4	
Soerobaya	Oct. 17-27	2		
Ecuador:				
Guayaquil	Nov. 16-30	46	19	
Egypt:				
Provinces—				
Assiout	Oct. 14-Dec. 13	16	14	
Kena	Nov. 20-Dec. 13	3	3	
Minieh	Dec. 13	1		
India:				
Bombay	Nov. 19-Dec. 2	17	16	
Calcutta	Nov. 11		6	
Karachi	Nov. 26-Dec. 2		3	
Indo-China:				
Saigon	Nov. 13-19	3		
Mauritius	Nov. 3-9	4	4	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Straits Settlements:				
Singapore	Nov. 5-18	3	3	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Canada:				
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-23	12		
Quebec—				
Montreal	Dec. 17-23	2		
Ontario	do	20		
Ceylon:				
Colombo	Nov. 12-18	1		
China:				
Canton	Nov. 11-25	15	3	
Hongkong	Nov. 12-18	9	6	
France:				
Marseille	Nov. 1-30		1	
Paris	Dec. 3-9	15		
India:				
Bombay	Nov. 19-Dec. 2	19	8	
Indo-China:				
Saigon	Nov. 13-19	2		
Italy:				
Genoa	Dec. 1-15	6	1	
Leghorn	Dec. 16	5	1	
Naples	Dec. 3-9	8		
Palermo	Nov. 26-Dec. 9	879	219	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received during week ended Jan. 5, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Java:				
Batavia	do		1	
Mexico:				
Chihuahua	Nov. 20-Dec. 26	30	6	
Juarez	Dec. 19-23	1		
Magdalena	Dec. 23	45	13	
Mazatlan	Dec. 11-26		3	
Monterey	Dec. 11-24		2	
Porfirio	Dec. 3-9	3	3	
San Duval	Dec. 16			Present.
Tampico	Dec. 1-20	4	4	
Tapachula	Nov. 1-22		13	
Russia:				
Moscow	Nov. 19-25	5		
Odessa	Nov. 26-Dec. 2	2	1	
St. Petersburg	Dec. 19-25	10	1	
Spain:				
Valencia	Dec. 3-9	6	1	
Teneriffe:				
Santa Cruz	do		6	
Turkey in Asia:				
Beirut	do	8	3	
Turkey in Europe:				
Constantinople	Dec. 4-17		12	
Zanzibar:				
Zanzibar	Oct. 28-Nov. 17	1	1	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Dec. 2	163,084	55								1		2	1
Amsterdam	Dec. 9	579,705	122	22						1		1		5
Antwerp	Dec. 2	327,668	64	6							2	1		
Athens	Dec. 9	250,010	14									1		
Barcelona	Dec. 15	591,272	310	24						3	1	2		
Barmen	Nov. 1	170,100	28								14	4		
Do	Nov. 25		41								1		2	
Barranquilla	Dec. 2	40,000	13	2						4				
Batavia	Nov. 18	217,630				2		1						
Beirut	Dec. 9	80,000	20	2				3		5				
Belfast	do	385,492	119	21							1	2		2
Birmingham	do	842,512	237							1		2		3
Do	Dec. 16		255								1		1	5
Bombay	Nov. 23	977,822	551	46	8			5						
Do	Dec. 2		592	42	8			3						
Bradford	Dec. 8	288,723	97	8								4	1	
Bremen	Nov. 25	246,850	71	9							1	2	2	
Do	Dec. 2		63	9								2	1	
Bristol	Dec. 16	357,509	114	5									3	
Brunswick	Nov. 26 Dec. 3	145,000		5						1	9	19		
Brussels	Dec. 9	739,684	147	16						2	1	2		
Calcutta	Nov. 11	890,493	510	32	6	39								
Canton	Nov. 11-25.	1,000,000	220	40				3		5		2		
Catania	Dec. 15	207,000	79	3							4		1	
Chihuahua	Nov. 26	39,000	29	2				1						
Do	Dec. 3		23	1				1						

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Chihuahua	Dec. 10	39,000	31	2				3				1		
Do	Dec. 17		27					2				1		
Christiania	Dec. 9	245,000	67	12							1	3	1	
Colombo	Nov. 18	213,974	151	17						5				
Constantinople	Dec. 10	1,000,000	254	38				8		7	4	3	1	
Do	Dec. 17		226	22				4		4	5	1		
Copenhagen	Nov. 25	462,000	94	14										1
Dalny	{Sept. 5 Nov. 18}	47,837	192	17						5				
Do	Nov. 25		17	1						1				
Do	Dec. 2		13							1				
Dresden	Nov. 25	555,100	150	25							5	6		
Do	Dec. 2		143	20						1	1	5		
Dundee	Dec. 9	171,006	52	7										1
Do	Dec. 16		66	6								1		
Dublin	Dec. 9	403,732	157	29						1	1	1	1	3
Edinburgh	..do	320,839	87	8								1		1
Erfurt	Nov. 25	125,430	29	2								3	1	
Frankfort on the Main	..do	419,300	75									3		1
Do	Dec. 2		76									2		
Ghent	..do	165,965	44	7								1		
Glasgow	Dec. 15	784,655	257							5	1	2	7	3
Gottenborg	Dec. 9	168,000	58	7							1	1		1
Hamburg	..do	931,035	261	27						1	3	15	3	1
Havre	..do	136,159	60	8						1		1		
Do	Dec. 16		66	12						1	1		1	
Hongkong	Nov. 18	336,488						6		1				
Iquique	..do	40,000		5	1					1				
Do	Nov. 25			6	1									
Juarez	Dec. 23	6,500	11									1		
Karachi	Dec. 2	148,000	61		3								1	
Kingston	Dec. 23	21,000	7	1										
Kobe	Dec. 3	404,851	282							2		1		
Konigsberg	Nov. 25	247,300	89	9									6	3
Do	Dec. 2		92	8									3	2
Leeds	Dec. 9	445,568	178	14							1	2	1	
Do	Dec. 16		153	16							1	3		2
Leghorn	Dec. 9	104,000	27	3				1						
Do	Dec. 16		30											
Leipzig	Dec. 2	595,703	145	15					1		1	1		2
Leith	Dec. 9	80,674	23	1								2		
Liverpool	..do	747,627	274	22						2	2	3	7	2
London	..do	7,269,752	1,814							3	4	20	9	13
Lubeck	Dec. 12	100,000	38	1								2	2	
Lyon	Dec. 2	146,000	146	26								2		
Manaos	Nov. 25	52,000	44	4			3							
Do	Dec. 2		40	1			1							
Sheffield	Nov. 25	454,653	129	9						1	2	1	1	
Do	Dec. 2		134	9						1		3		1
Do	Dec. 9		123	7						2		1		3
Vienna	Nov. 19	2,064,583	605	85						2	1	6	4	
Do	Nov. 25		608	89							5	6	7	1
Vigo	Dec. 9	41,500	21	6								1		2
Yokohama	Dec. 4	419,630								1				

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (untabulated).

Brazil—*Santos.*—Two weeks ended September 16, 1911. Population, 85,000. Total number of deaths from all causes 40, including measles 1, typhoid fever 1.

Great Britain.—Week ended December 2, 1911.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 15.7 per 1,000 of the population, which is estimated at 16,157,797.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 18.3 per 1,000 of the population, which is estimated at 1,149,495. The lowest rate was recorded at Galway, viz, 3.9, and the highest at Sligo, viz, 65.4, per 1,000 of the population.

Scotland.—The deaths registered in 8 principal towns correspond to an annual rate of 18 per 1,000 of the population, which is estimated at 1,710,291. The lowest rate was recorded at Perth, viz, 14.5, and the highest at Aberdeen, viz, 20.8, per 1,000 of the population. The total number of deaths from all causes was 589, including diphtheria 15, measles 31, scarlet fever 2, typhoid fever 2.

Italy—*Genoa.*—Two weeks ended November 30, 1911. Population, 272,077. Total number of deaths from all causes 162, including diphtheria 3, smallpox 3, tuberculosis 15, typhoid fever 1.

Russia—*Riga.*—Month of September, 1911. Population, 355,000. Total number of deaths from all causes 592, including diphtheria 12, measles 1, scarlet fever 10, typhoid fever 7, typhus fever 1.

Spain—*Madrid.*—Month of November, 1911. Population, 584,117. Total number of deaths from all causes 987, including diphtheria 28, measles 8, smallpox 1, tuberculosis 144, typhoid fever 14, typhus fever 1.

Malaga.—Month of October, 1911. Population, 135,000. Total number of deaths from all causes 328, including diphtheria 2, measles 2, smallpox 24, tuberculosis 22.

Seville.—Month of November, 1911. Population, 158,235. Total number of deaths from all causes 403, including diphtheria 10, smallpox 3, tuberculosis 55.

By authority of the Secretary of the Treasury:

A. H. Glennan,
Acting Surgeon General,
United States Public Health and Marine-Hospital Service.

PUBLIC HEALTH REPORTS.

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THE TARBAGAN (ARCTOMYS BOBAC) AND PLAGUE.

By **Paul Preble**, Assistant Surgeon, Public Health and Marine-Hospital Service.

There seems to be considerable evidence that the tarbagan, *Arctomys bobac*, has been for many years associated with outbreaks of plague in Siberia, Mongolia, and Manchuria. This association has been mentioned in the writings of numerous Russian and other investigators and many hypotheses have been set forth. But, so far as the writer has been able to determine, no authentic proof has been forthcoming that the disease from which the tarbagan suffers and which is apparently transmissible to man, is true plague. Most of the statements concerning the disease heretofore have been quoted from the natives of the localities where this marmot lives, and until quite recently no writer has seen or described, after personal investigation, the disease in the tarbagan. And further there seem to be no positive or authoritative statements which fix the status of the tarbagan disease on a bacteriological or pathological basis.

THE TARBAGAN (ARCTOMYS BOBAC).

The tarbagan has been called by various authors sarbagan, sarabagan, tarabagan, phutiya, and han ta. The spelling, tarbagan, is that given by the Russian writers, who believe it to be of Transbaikal origin, and who have observed on the spot the disease to which this animal is subject.

The tarbagan is said to be indigenous to Thibet and common in Mongolia. At least six species of Arctomyinæ, the subfamily to which the tarbagan is said to belong, are reported to be found in various parts of Central Asia, but the so-called tarbagan appears to be the most widely spread. In Europe it is found as far west as Russia and eastern Germany. In Asia its habitat is given as Siberia, Mongolia, Thibet, and Manchuria.

According to Tchaouchov this animal is a hibernating rodent of the genus Marmota (synonym, Arctomys; subfamily, Arctomyinæ) and is classified as *Arctomys bobac*. There are many species of Arctomyinæ and Blue (1) notes 12 varieties for California. The American ground hog, woodchuck, and ground squirrel belong to this same family.

In the new National Museum there are specimens of an animal classed as *Marmota bobac*. This animal has rather long, coarse, yellow, and light-brown fur, the tips of the hairs being dark. All the specimens are somewhat larger than the tarbagan as described below by Tchaouchov. Mr. G. S. Miller, curator of mammals at the museum, believes that the quality of the fur of these specimens argues against the statement that this species could be used to imitate to any large extent the fine fur of martin and sable. He states that our knowledge of the fauna of the region where the tarbagan is said to be found is far from complete and that it seems to him very probable that there is more than one species of rodentia included among the so-called tarbagans.

Pallas (2) in 1778 classified the tarbagan as *Marmota bobac.* Skschivan (19) and others refer to the tarbagan as *Arctomys bobac.* There seems but little doubt that the animal properly known as the tarbagan is this species.

The fur of the larger spermophiles known to inhabit Mongolia and northern Manchuria would lend itself more easily to the imitation of sable or martin, as it is of a finer quality. It may be that the so-called "tarbagan hunters" in reality trap several varieties of marmots and spermophiles, and it seems very possible that it may, at some future date, be determined definitely that the spermophiles of Mongolia, Manchuria, and Siberia are also instrumental in spreading plague. But until the fauna of these regions has been more accurately established and until more definite bacteriological and pathological evidence is advanced establishing the susceptibility of these rodents to plague it seems impossible to determine whether the *bobac* alone is responsible for the reported outbreaks of plague or whether other rodents may not harbor the bacillus of plague and transmit it to man.

Tchaouchov (3) describes the tarbagan as a little larger than a rabbit; 37 centimeters long, with a tail 9 centimeters; weight, from 6 to 8 kilograms; paws, short and heavy; the hind legs, larger and provided with stout claws for digging and for defense and attack; the upper lip, fleshy and bifurcated; the incisors, covered with steel-like enamel.

The animal lives in burrows extending 2 meters below the surface of the ground, with a passage 10 to 14 meters long leading into a nest or chamber 1 to 2 meters in diameter, the floor of which is covered with dried grass. The main burrow has several secondary passages for ventilation and exit. The tarbagan is found usually in large colonies, occupying a space several square kilometers in area and recognizable by the hummocks at the mouths of the burrows. They feed on herbs and roots, and in captivity will eat roots, cabbages, and similar foods, and will take milk readily.

With the beginning of October they shut themselves in their burrows to hibernate until March or April, filling the entrances to their burrows with dirt, stones, and grass. From time to time they awaken to get rid of accumulated feces, which they utilize to fill the cracks in their nests, but from December on they fall into a sort of catalepsy. At the beginning of spring they are lean from the lack of nourishment, and at this time the females bear from 4 to 6 young. The tarbagan in health utters a cry which sounds like "*pu p'a,*" and which, according to the Chinese, means "no harm."

Tarbagans are hunted now principally for their fur, which is in considerable demand, and is used to imitate martin and sable. Use is also made to some extent by the natives of their flesh which is said to have the flavor of goose, and of their fat for greasing leathers and for lighting. One tarbagan will yield at least 2 kilograms of oil, the price of which varies between 10 and 30 cents in Siberia. This oil is very penetrating, and does not harden in the coldest weather. The fur is generally sold at a price of from 5 to 15 kopecks (2 to 7 cents). It is reported that from a single region (Kobdo-Oulaseutai) a half million skins are brought annually to the market place at Irbit.

PLAGUE IN TARBAGANS.

Tchaoushov (3) states that, according to Skschivan, the most ancient Thibetan writings describe a disease of tarbagans which was considered to be highly contagious and caused by worms found in the roots of certain plants, and which was transmitted to man; also that Tcherkashov first pointed out in 1867 that a large number of tarbagans died in certain years from a contagious disease, and that the natives who ate the flesh of these animals during the epizootic died, but he gives no details.

In 1892 there appeared a short article in a Transbaikal journal (4) in the form of an official warning from the authorities to the inhabitants against the dangers of the disease.

Biéliavski and Riéshetnikoff (5) in 1895 gave probably the best account of the disease in tarbagans published up to that time. They called it "tarabagania tchuma"; that is, plague (tchuma) arising in connection with the "tarabagania." Twenty-six cases were collected in the Akshin military district among six families between 1888 and 1894, and in addition they report six bodies of "Buriats" who were said to have died from this disease of tarbagans. That the six died from plague seems evident from the fact that a physician and his assistant who made necropsies on the bodies died from a disease which was proven to have been plague.

Biéliavski states that periodically the tarbagans are attacked by an epizootic, usually beginning in the autumn just before the hibernating season. According to him, the disease is highly contagious and is spread to man by eating the flesh of the animal, but more easily by simple contact with sick tarbagans. He visited the village of Soktui after an outbreak in a Cossack family in 1894. The first case, a male, in this family was traced to the tarbagan. The natives are well informed of the existence of the disease among the tarbagans and during epizootics refrain from touching the sick animals.

Riéshetnikoff was of the opinion that the epizootic in this rodent usually breaks out in years of great drought, when the animal is forced to go without food and water, and that the disease spreads to man by contact.

Podbielski (6) believed that tarbagans became infected by feeding on grass which had been contaminated by bodies of hunters and native nomads who had died from plague and who had been left by their companions and were later devoured by wild animals. He was also of the opinion that in Mongolia there are certain permanent plague foci in the ground from which tarbagans become infected.

Tchaoushov (3) states that he is of the opinion that the disease appears first in man and then spreads to the rats and tarbagans, both of which subsequently may be the cause of the disease in man (by fleas and by contact with dead tarbagans). He believes the disease, which he is convinced is plague, is less dangerous for man than rat plague, because ordinarily man is not associated with tarbagans in the same manner that he is with rats. Tarbagans affected with this disease have nearly all died by the approach of winter, and only the healthy ones hibernate. It might be supposed that the sick animals, at the approach of winter, would hide in the empty summer burrows and die there, and that from these burrows in the spring a fresh outbreak of the epizootic might occur. But according to Skschivan (7) and others, the disease makes its appearance only at the end of summer and the beginning of autumn, when the tarbagans, on account of thirst and hunger, devour the human plague cadavers left on the ground.

Skschivan (7) has observed that the disease manifests itself usually during the autumn in many different localities near endemic foci, and that the disease is readily conveyed to man, in whom are observed all the usual signs of plague.

Schreiber (8), according to Tchaoushov (2), believed that the disease in tarbagans was true plague, identical with plague in man, but that the disease was not peculiar to this species as glanders is peculiar to horses. Schreiber (9) was sent by the Russian Government at the end of 1905 into the infected region in Mongolia for a scientific investigation of the disease. In his paper he stated that he had been unable to observe the disease either in man or the tarbagan, apparently on account of the fact that the disease breaks out only in the autumn and that he arrived in the region too late to find cases. His reports of outbreaks, obtained from the natives, are similar to those of other writers. In a summary he gave certain reasons which seemed to him to militate against the identity of the disease in the tarbagan with true plague in man: (1) The undoubted occurrence of these epizootics without human beings being infected. (2) The fact that field mice, which are known to be susceptible to plague, do not contract the tarbagan disease. (3) The fact that domestic animals escape it.

Kokossoff, according to Tchaoushov (3), is the only physician who has observed sick tarbagans; but he speaks only of the loss of the instinct of self-preservation, in addition to the symptoms mentioned by other writers.

Clemow (10), in 1900, in a paper on plague in the lower animals, called attention to the infection of the tarbagan with a disease supposed by many writers to be plague and also summarized the article by Biéliavski and Riéshetnikoff. He believed that it was not possible to be certain of the nature of the disease in tarbagans, but that it could only be asserted that there was (1900) in Transbaikalia, near the Mongolian frontier, a center of endemic disease which, if not identical with plague, had many points in common with it and that the most important respect in which the disease appeared to differ from plague was in the absence of marked mental symptoms. The description of the pulmonary symptoms resembles to a considerable extent that of the symptoms of plague pneumonia. He also stated that there is a center of undoubted plague in eastern Mongolia and that it is said to be associated with the tarbagan.

While there seems to be sufficient evidence to associate the tarbagan directly with outbreaks of plague in Siberia, Matignon (11) and Zabotny (12), who were sent into Mongolia to study the outbreaks that had been occurring there since 1888, reported that they found no evidence of mortality among rats or domestic animals. Matignon, however, mentions the interesting fact that, for a number of years, the "Belgium fathers" had observed a disease in the tarbagans; but neither Matignon nor Zabolotny appear to have seen this disease. Up to 1900 there seems to be no evidence as to the identity of the disease in man and the marmot in the Mongolian center, or of its transmission from one to the other.

In 1896 there occurred in Mongolia a particularly severe epidemic. The symptoms reported were those of plague. The majority of those affected had buboes and Zabolotny obtained cultures from some of the cases, which cultures were later demonstrated to contain virulent plague organisms.

From the symptoms of the disease in Siberia and Mongolia as reported by several writers, and from the fact that Zabolotny recovered the bacillus of plague from patients in Mongolia dying from a disease giving the same symptoms found in cases in Siberia, it would seem probable that both regions suffer from what is undoubtedly true plague. And, further, considering the fact that the tarbagan is common throughout these regions and is quite definitely associated with the disease in man in Siberia, it seems also very probable that this animal plays an equally important rôle in Mongolia.

Tchaoushov (3), in a recent article, reaches the following conclusions regarding the presence of plague in the tarbagan: "(1) The tarbagan is the marmot of Asia, which is distinguishable in no way from that of Europe. (2) Plague in tarbagans is proven only in Asia and especially near certain plague centers. Plague in tarbagans has never been proven in Kamchatka and Altai. (3) Tarbagans, in case of necessity, eat meat and are able without doubt to devour human plague cadavers left on the ground, and, as a consequence, to become infected with plague. (4) Plague does not appear spontaneously among tarbagans. They become infected with plague by the intermediation of human cadavers, and are able then to give plague to man when he hunts them. (5) The mortality among tarbagans is due to various causes. Besides plague, it suffers from other contagious diseases, without speaking of the mortality due to famine. (6) In devouring plague cadavers tarbagans become infected by way of the external mucous membranes and cutaneous lesions. (7) The natives and Transbaikal Cossacks become infected with plague in removing the skins from tarbagans when a friction with infectious material takes place, and also by the intermediation of fleas from tarbagans. With the mucous membranes of the digestive tract intact it is difficult to admit the possibility of infection by meat. (8) It is necessary to admit that in the Transbaikal Province there exists or has existed an endemic plague center similar to that which exists in the government of Astrakhan."

PLAGUE IN MANCHURIA, 1910–11, AND THE TARBAGAN.

The severe outbreak of plague in Manchuria during the winter of 1910–11 has been stated to have originated among tarbagan hunters in eastern Mongolia and northwestern Manchuria (13) (14). Zabolotny seems of the opinion that rodents played no part in the spread of the disease. The prevalent type was pneumonic of a most virulent nature, and spread from man to man by direct contact. Many rats were examined bacteriologically, but not one was found infected.

The native Mongols and "Buriats" are said to be well acquainted with the dangers of handling sick tarbagans, which for years have been supposed to suffer from a disease transmissible to man. The Chinese coolies from Manchuria and northern China are brought into eastern Mongolia and northwestern Manchuria to trap the tarbagans for their fur. These coolies as a rule are unable to recognize sick tarbagans and have no knowledge of the dangers in handling sick animals and so take no precautions. It is said that at least 96,000 Chinese went into Manchuria in the autumn of 1910 to trap tarbagans and to work on the farms, most of them returning to their homes in October, at which time the tarbagan begins to hibernate.

Evidence points to the fact that plague originated among coolies who handled tarbagans, which, during the autumn of 1910, were reported to have suffered from some sort of epizootic. The pneumonic form of the disease is quite common among the tarbagan hunters. The symptoms of the disease in this and other epidemics of plague bear a striking resemblance to that of the symptoms of the disease described by Biéliavski and other writers, among the natives of Siberia and Mongolia, and supposed by many to be plague and to be contracted from tarbagas.

SYMPTOMS OF THE DISEASE OF TARBAGANS.

There are numerous descriptions given of this disease of tarbagans scattered in the literature, many by Russian writers, and they are all quite similar in most details. The following is a summary from the description of Ch'uan (15), Biéliavski (5), and others:

The infected animals cease their barking, become languid, and their movements slow and unsteady. If they leave their burrows, they are unable to get back to them and thus fall a prey to their natural enemies, wolves, dogs, and eagles. If the sick do find their way back to their burrows, the healthy ones refuse them admission, and they soon die outside. Ch'uan states that they become deaf, their eyes red, and partially blind. Their paws become bloodless. The native hunters are able to determine the presence of the disease by making incisions in the paws of freshly killed tarbagans. If these bleed, the animal is healthy, but if diseased they find only coagulated blood, which finding they believe is positive evidence of the disease.

In a majority of the diseased tarbagans, a tense reddish swelling is found under the shoulder. This may be very small and indeed absent. If absent, the natives rely upon the blood clot in the paw.

Wolves seem fond of the flesh of the diseased tarbagans, but neither they nor dogs, who also devour dead tarbagans, appear to contract the disease.

SYMPTOMS OF THE TARBAGAN DISEASE IN MAN.

There seems to be sufficient evidence that the natives of Siberia, Mongolia, and neighboring countries in which the tarbagan is found suffer at certain periods from a contagious and highly fatal disease, which is contracted directly from this marmot either by handling naturally infected animals or in some instances by eating the flesh of animals that have the disease. The disease in man was referred to as 'tarbagania chuma" by Rudenko (16), who is said to have discovered it among the tarbagan hunters. Many Russian writers have described localized epidemics in tarbagan hunters and members of native tribes, and mention is often made that plague is endemic in these regions. Their description of the symptoms in these outbreaks seems to justify calling the disease plague.

Kokosoff (17) reported 11 fatal cases with the following symptoms: The members of the family in which the disease originated had all been engaged in skinning tarbagans. The symptoms in all were identical; severe headache, then a rise in temperature to about 41.6 C., followed by inflammation of the lymphatic glands in the axilla, and in some the submaxillary glands. Vomiting and diarrhea before death were noted. The illness lasted from four to seven days and was fatal in all his cases.

Riéshetnikoff (5) gave the period of incubation as four or five days. He noted the usual symptoms observed by other writers, and added pains in the thorax, accompanied by a dry cough and a disagreeable expectoration, sometimes tinged with blood. Respiration and pulse rate were increased and later weakened.

This disease in man is commonly pneumonic in character, and the tarbagans are said to suffer from a similar type of disease.

EXPERIMENTAL PLAGUE IN TARBAGANS.

At the appearance of plague in a Russian village near the Dalai Nor station, in Manchuria, in 1905, Tchaoushov (3) made some laboratory experiments with nine healthy tarbagans. They were divided into four series. The first series received an injection of fluid from a human plague bubo; the second, an emulsion of sputum containing a considerable number of the cocco bacillus of plague; the third, some bouillon culture; and the fourth, two tarbagans, were put into a cage with infected tarbagans. He summarized the results of his experiments as follows:

(1) Tarbagans are susceptible of being infected with the *Bacillus pestis* by the common methods used in other laboratory animals, guinea pigs, rats, mice, rabbits, and monkeys. (The friction method was not tried.)

(2) Tarbagans can be infected by the way of the nasal and ocular mucous membranes.

(3) It was not possible to determine the mode of the infection of the two tarbagans living in a cage with infected tarbagans; whether by fleas, which conveyed the virus from the infected, or to the fact that they devoured the bodies of the infected animals. One undoubtedly died of plague and the other had plague, but recovered.

(4) The pathological lesions in the tarbagans affected with plague could not be distinguished from those described in other laboratory animals.

(5) The caged tarbagans ate meat, as the natives had affirmed for a long time. He states that there is no doubt that tarbagans at large will eat meat (human cadavers) when vegetable food fails them, and that the discovery by Podbielski of human bones in and around tarbagan burrows proves it completely.

Shibayama (18) reports that experimentally the tarbagan is not so susceptible to plague as the rat. He gave a tarbagan a subcutaneous injection of one one-hundredth part of a loopful of a pneumonic strain from the recent Manchurian epidemic. The animal died several days later. Few alterations were found in the internal organs.

Skschivan (19) stated that the virulence of an organism plays an important rôle in inoculation experiments. He used an old culture of a plague organism that had so lost its virulence that by injecting one to two agar cultures into the abdominal cavity of a guinea pig a chronic form of plague was produced with a wasting and a thickening of the great omentum. He failed to infect guinea pigs by rubbing this same culture into the shaved abdominal wall after the method of Albrecht and Ghon. He then repeated the same experiments with this nonvirulent culture in a "tarbagan (*Arctomys bobac*)" brought to him from Mongolia. By rubbing it into the shaved skin he produced a slight infection, and a subsequent subcutaneous inoculation caused a general septicæmia with a hemorrhagic plague pneumonia, but without local reaction or bubo formation.

BACTERIOLOGY OF THE DISEASE OF TARBAGANS.

From the data at hand there appears to be no positive bacteriological proof that the disease which at times becomes epizootic among tarbagans is true plague. Inspired perhaps by the recent epidemic in Manchuria and China, a scientific mission was organized, according to a recent article (20), by the Pasteur Institute in May, 1911, with the object of studying the origin of plague in the Kirghiz Steppes. No other report of their findings has appeared in the literature to the writer's knowledge, but it is to be hoped that they have been able to definitely establish the rôle played by the tarbagan in the propagation and spread of plague in these regions.

Kitasato (21) at the International Plague Conference at Mukden in April, 1911, agreed with others that the responsibility of the tarbagan must be discussed as a fact not yet bacteriologically proven. However, there appear in the literature several references (22) to the fact that bacilli presenting all the characteristics of *bacillus pestis* have been found in this marmot and also in the bodies of natives who have died from a disease contracted by handling sick tarbagans or by eating their flesh. No details of such findings have been found after rather an extensive search of the literature.

FLEAS ON TARBAGANS.

On account of the rôle played by fleas on rats and ground squirrels in the spread of plague it will be interesting to definitely determine if tarbagans harbor these parasites and if fleas are responsible for the spread of the disease among these rodents and its transmission to man. The existence of some such agent might be predicted, as plague is reported to exist in certain places in Siberia and Mongolia in endemic form both among animals and man.

Petrie (23), of the Lister Institute, a British delegate to the International Conference at Mukden in April, 1911, reports having examined 12 tarbagans sent direct from Manchuria to Mukden. Thirty-five fleas were found, with an average of 3 per animal, 12 being found on one. April was considered the season of least prevalence of fleas, and his findings suggest that tarbagans, during the flea-breeding season, are infested with fleas. The fleas found were unusually large, and appeared to resemble the flea belonging to the genus *hystrichopsylla*.

Tuck (24) suggests the flea as an intermediate host and states that there seems to be no great mortality among tarbagan hunters while in the field, but that the disease spreads rapidly when these hunters return to the market places in winter and crowd into insanitary dwellings.

SUMMARY.

Plague is known to be endemic in several regions in Siberia and Mongolia. From remote times, the tarbagan, a marmot common in these regions, has been observed to suffer from a fatal epizootic, beginning in the autumn before the hibernating season. The symptoms of this disease suggest plague. The tarbagan is hunted in the late autumn for its fur. Plague is reported to break out among hunters of tarbagans, especially among imported coolies, who, unlike the natives, are unable to detect sick animals.

Tarbagans are reported to be susceptible to inoculations with the *bacillus pestis*, and fleas have been found on them. A priori, from the rôle played by ground squirrels and their fleas in the transmission of plague, the hypothesis that a similar rôle is performed by the tarbagan is presented. This has, however, only the value of an hypothesis since bacteriological and pathological proofs are as yet lacking.

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UNITED STATES.

MODIFICATION OF RESTRICTIONS RELATIVE TO IMMIGRANTS.

On account of the fact that cholera conditions throughout Europe warrant such action, the State Department has been requested to cable advices to the consular officers of Germany, Belgium, Holland, Great Britain, France, Italy, and Austria-Hungary that until further notice the detention at foreign ports of departure of steerage passengers destined for the United States will be no longer required on account of cholera, unless from known cholera-infected districts.

ESTABLISHMENTS LICENSED FOR THE PROPAGATION AND SALE OF VIRUSES, SERUMS, TOXINS, AND ANALOGOUS PRODUCTS.

The following table contains a list of the establishments holding, on January 1, 1912, licenses issued by the Treasury Department in accordance with the act of Congress approved July 1, 1902, entitled "An act to regulate the sale of viruses, serums, toxins, and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes."

The number of the license of each firm is also given, together with the names of the several products for which licenses have been granted.

No. of license.	Establishments.	Products.
1	Parke, Davis & Co., Detroit, Mich.....	Diphtheria antitoxin, antigonococcic serum, antistreptococcic serum, antitetanic serum, antitubercle serum, tuberculins, bacterial vaccines, erysipelas and prodigiosus toxins (Coley), vaccine virus, normal goat serum, normal horse serum, thyreodectomized horse serum, and thyreodectomized goat serum.
2	H. K. Mulford Co., Philadelphia, Pa...	Diphtheria antitoxin, antidysenteric serum, antimeningococcic serum, antipneumonic serum, antistreptococcic serum, antitetanic serum, tuberculins, vaccine virus. normal horse serum, bacterial vaccines, and antirabic virus.
3	Dr. H. M. Alexander & Co., Marietta, Pa.	Diphtheria antitoxin. antirabic virus, vaccine virus, and normal horse serum.
5	Fluid Vaccine Co., Milwaukee, Wis....	Vaccine virus.
8	The Cutter Laboratory, Berkeley, Cal..	Diphtheria antitoxin, antistreptococcic serum, tuberculins, bacterial vaccines, and vaccine virus.
9	Frederick Stearns & Co., Detroit, Mich.	Diphtheria antitoxin, streptolytic serum, and pneumolytic serum.
11	Pasteur Institute of Paris, Paris, France.	Diphtheria antitoxin, antidysenteric serum, antimeningococcic serum, antiplague serum, antistreptococcic serum, sérum antivenimeux, antitetanic serum, and antiplague vaccine.
12	Chemische Fabrik auf Actien, Berlin, Germany.	Diphtheria antitoxin and antistreptococcic serum.

No. of license.	Establishments.	Products.
14	Health Department of the City of New York.	Diphtheria antitoxin, antitetanic serum, antirabic virus, vaccine virus, tuberculin, and antimeningococcic serum.
16	National Vaccine and Antitoxin Institute, Washington, D. C.	Diphtheria antitoxin, antigonococcic vaccine, vaccine virus, normal horse serum, antistaphylococcic vaccine, antistreptococcic vaccine, and antityphoid vaccine.
17	Lederle Antitoxin Laboratories, New York City.	Diphtheria antitoxin, antistreptococcic serum, antitetanic serum, suspension of lactic acid bacilli, vaccine virus, and antityphoid vaccine.
18	Burroughs, Wellcome & Co., London, England.	Diphtheria antitoxin, antigonococcic serum, antidysenteric serum, anticolon-bacillus serum, antistaphylococcic serum, antistreptococcic serum, antityphoid serum, tuberculins, and bacterial vaccines.
19	Memorial Institute for Infectious Diseases, Chicago, Ill.	Diphtheria antitoxin.
21	Swiss Serum and Vaccine Institute, Berne, Switzerland.	Diphtheria antitoxin, antidysenteric serum, antimeningococcic serum, antipneumonic serum, antiplague serum, antistreptococcic serum, tuberculins, anticholera vaccine, antiplague vaccine, antityphoid vaccine, and antitetanic serum.
22	Institut Bactériologique de Lyon, Lyons, France.	Antidiphtheric serum and normal goat serum.
23	Bacterio-Therapeutic Laboratory, Asheville, N. C.	Tuberculins.
24	Farbwerke, vormals Meister Lucius und Brüning, Hoechst-on-Main, Germany.	Diphtheria antitoxin, antidysenteric serum, antimeningococcic serum, antipneumonic serum, antistreptococcic serum, antitetanic serum, and tuberculins.
25	Tuberculin Society of St. Petersburg, St. Petersburg, Russia.	Tuberculinum purum.
27	Institut Pasteur de Lille, Lille, France.	Sérum antivenimeux.
28	Bacteriologisches Institut Lingner, Dresden, Germany.	Pyocyanase.
29	The Behringwerk, Marburg, Germany.	Antitetanic serum and tuberculin.
30	Dr. G. H. Sherman, Detroit, Mich.....	Bacterial vaccines.
31	E. Merck, Darmstadt, Germany.......	Antidiphtheric serum, antimeningococcic serum, antipneumonic serum, antistreptococcic serum, normal horse serum (dried), normal horse serum, and leucofermantin (antitryptic sheep serum).
32	Kalle & Co., Biebrich, Germany.......	Tuberculin (Rosenbach).
33	American Biologic Co., Kansas City, Mo.	Antirabic virus.
34	The Béraneck Laboratory, Neuchatel, Switzerland.	Tuberculin (Béraneck).
35	Dr. Carl Spengler, Davos-Platz, Switzerland.	I. K. immune blood.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since Jan. 1, 1910.]

BERKELEY, CAL.

PUBLIC LAUNDRIES AND WASHHOUSES—REGULATION OF.

SECTION 1. It shall be unlawful from and after the passage of this ordinance for any person, firm, corporation, or association of persons to establish and operate a public laundry or washhouse within that portion of the city of Berkeley lying east of the following-described line: Commencing at a point on the northern boundary line of the city of Berkeley 100 feet westerly from the intersection of said northern boundary line and the westerly line of Shattuck Avenue; thence southerly and parallel with the meandering westerly line of Shattuck Avenue to the northerly line of Carlton Street; thence easterly along said northerly line of Carlton Street to the easterly line of Fulton Street; thence southerly along said easterly line of Fulton Street and said line extended southerly to the southern boundary line of the city of Berkeley.

SEC. 2. It shall be unlawful from and after the passage of this ordinance for any person, firm, corporation, or association of persons to establish and operate a public laundry or washhouse within the corporate limits of the city of Berkeley in any building the exterior walls of which are within 20 feet of the exterior walls of any other building occupied and used for residence purposes or for a public school.

SEC. 3. It shall be unlawful for any person, firm, corporation or association of persons to establish, maintain, operate or carry on a public laundry or washhouse within the corporate limits of the city of Berkeley in any building, or any portion thereof, or in any annex or outhouse thereto, that shall be occupied or used, either directly or indirectly, as a public hall, store, restaurant, or lodging house, or that is frequented or occupied by many persons, or that is occupied as a stopping place by transient guests, or that is frequented by persons likely to spread infectious, contagious, or loathsome diseases, or that is occupied or used or frequented, directly or indirectly, for any immoral or unlawful purpose.

SEC. 4. It shall be unlawful, within the corporate limits of the city of Berkeley, for any person, firm, corporation, or association of persons to employ in the conduct or operation of a public laundry or washhouse any person suffering from any contagious, infectious, or loathsome disease, or to permit any person suffering from any contagious, infectious, or loathsome disease to lodge, sleep, frequent, or remain in any portion of any building used for the purpose of operating or conducting a public laundry or washhouse, or in any outhouse or annex to any building in which a public laundry or washhouse is being operated or carried on.

SEC. 5. Excepting in cases where clothes are dried by the forced circulation of heated air, or by circulation of the clothes mechanically through air artificially heated, it shall be unlawful for any person, firm, corporation, or association of persons conducting, maintaining, or operating a public laundry or washhouse within the corporate limits of the city of Berkeley to dry any article of clothing washed in such laundry in any room other than one used exclusively for drying purposes, which room must be entirely shut off from any other room, excepting that it may be connected with another room by means of a door opening thereto, in which event such door shall always be kept closed when not being used by a person entering or leaving such drying room, and must be ventilated by means of at least two windows opening to the outer air, which windows shall be on different sides of the room.

SEC. 6. It shall be unlawful for any person, firm, corporation, or association of persons conducting, maintaining, or operating a public laundry or washhouse within the corporate limits of the city of Berkeley to wash or permit to be washed any article of clothing in any room the floor of which is not constructed of cement and drained into the public sewer by means of a cast-iron pipe above ground and a cast-iron or iron-stone pipe under ground, which drainpipe shall be connected with a 9 by 9 inch drainage cesspool set in flush with such floor, and which cesspool shall be trapped and vented so as to prevent sewer gases from entering into such room.

SEC. 7. Any person, firm, corporation, or association of persons who shall violate any of the provisions of this ordinance shall be guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine of not exceeding $500 or by imprisonment not exceeding six months, or by both such fine and imprisonment.

SEC. 8. Ordinance No. 407-A is hereby repealed.

SEC. 9. This ordinance shall take effect and be in force 30 days from and after its final passage. [Ordinance in effect Aug. 5, 1910.]

NEW ORLEANS, LA.

STABLES AND MANURE—DESTRUCTION OF BREEDING PLACES OF FLIES.

SECTION 1. Be it ordained by the council of the city of New Orleans, that it shall be the duty of the owner or occupant having on their premises any horse, mule, cow, or other animal, to remove or cause to be removed all manure from the said premises twice weekly from March 15 to December 1, and once a week from December 1 to March 15, and said owner or occupant shall be required to store in screened receptacles, not accessible to flies, all such manure pending its removal.

SEC. 2. Be it further ordained, etc., that it shall be the duty of the owner or occupant or tenant or keeper of any boarding, sales, livery, or other stables where such stock or animals are kept, to remove or cause to be removed, all manure from said stables or premises, twice weekly from March 15 to December 1, and once a week from 1st of December to the 15th of March, and said owner or occupant or tenant or keeper shall be required to store in fly-proof receptacles, not accessible to flies, all such manure pending its removal.

SEC. 3. Be it further ordained, etc., that from June 1 to October 1 manure shall not be used as a fertilizer on gardens, sidewalks, lots, or other open areas, unless and until thoroughly mixed with soil and so covered with soil that flies will not be attracted thereto.

SEC. 4. Be it further ordained, etc., that no manure shall be dumped and left on the street, sidewalk, alley, or open area or lot in any inhabited section nor be used to grade, in whole or in part, any sidewalk, street, alley, open area or lot in said section. And any site used as a public dump for manure shall not be within 300 feet of any building used in whole or in part for dwelling purposes.

SEC. 5. Be it further ordained, etc., that manure shall be conveyed through the streets in the city of New Orleans in such vehicles only as are properly protected against flies by suitable covering.

SEC. 6. Be it further ordained, etc., that all manure stacked or piled for fertilizing purposes on any truck farm or garden in thickly settled neighborhoods shall be so stacked or piled at a distance of not less than 25 feet from any building used, in whole or in part, for dwelling purposes, and shall be stored in a closed bin or screened receptacle, so as to prevent access of flies thereto.

SEC. 7. Be it further ordained, etc., that wherever the duty is put upon the owner of any premises or stable or lot or open area or public place in this ordinance in the owner's absence it shall be the duty of the agent of said owner to comply with the provisions of this ordinance; and for the purposes thereof, any person receiving or collecting rent or attending to said property in any manner shall be deemed to be the agent of the owner.

SEC. 8. Be it further ordained, etc., that any person who shall violate any of the provisions of this ordinance shall be subject to a fine of not less than $5 nor more than $25, or imprisonment in the parish prison for a term of not less than 10 nor more than 30 days, or both, at the discretion of the recorder having jurisdiction of same. [Ordinance adopted June 27, 1911.]

PITTSBURGH, PA.

PLUMBERS, PLUMBING, AND WATER-CLOSETS.

SECTION 1. Be it ordained and enacted by the city of Pittsburgh, in select and common councils assembled, and it is hereby ordained and enacted by the authority of the same, that for the purpose of enforcing the requirements of the laws and regulations relating to plumbing and house drainage, a plumbing inspector shall be permitted to enter any house or building, ground, or premises in the city of Pittsburgh at all times during the 24 hours, day or night, to thoroughly examine said plumbing, drainage, or any nuisance that would affect the public health; and he shall notify or cause to be notified the owner, agent, or occupant of the ground or premises in or on which such violation or nuisance shall be found, to correct, remove, or abate the same in a manner prescribed by the acts of the general assembly approved June 7, 1901, and May 14, 1909.

Sec. 2. No person or persons shall hinder or obstruct or in any manner interfere with any plumbing inspector of the department of public health of the city of Pittsburgh in the performance of his or her duties as such.

Sec. 3. When insanitary conditions exist in any public building, schools, churches, or colleges in the city of Pittsburgh, which in the opinion of the department of public health is a menace to the health of the people who may assemble there, and notice having been served to correct same and said notice not having been complied with, the department of public health shall thereupon order such building or buildings closed until said conditions are corrected and a certificate issued for the reopening of said building or buildings.

Sec. 4. All occupied dwelling houses shall be provided with properly wasted, trapped, and vented sinks with running water for the accommodation of each family occupying said house or houses.

Sec. 5. Floors of water-closet apartments, when in cellars or basements, shall be of some nonabsorbent material. Floors of market houses, restaurants, or hotel kitchens shall be of some nonabsorbent material, such as tile, cement, or asphalt.

Sec. 6. Water-closet apartments must not have direct communication with any dining room or kitchen, nor shall any water-closet be placed in any dining room or kitchen. Water-closet apartments must not be placed in a dining room, kitchen, or sleeping apartment nor have direct communication with a public dining room, restaurant, or kitchen, nor be placed in any room or compartment which has not direct communication with external air either by window or air shaft of at least 4 square feet. And when any window ventilating any water-closet compartment or bathroom opens directly into a vent shaft, no window or any room other than water-closet compartment, bathroom, pantry, or hall shall open into such vent shaft.

Sec. 7. Before any permits for any sewer connections are issued, the plumber will be required to file plans and specifications for plumbing of said building or buildings, and no permit will be issued to carry sewer or drains farther than curb line without said plans and specifications for the completion of the entire work of plumbing and drainage in said proposed building or buildings.

Sec. 8. Any person or persons who shall fail, neglect, or refuse to comply with, or who shall violate any of the provisions of this ordinance, shall upon conviction thereof in a summary proceeding before any police magistrate or alderman in the city of Pittsburgh, be sentenced to pay a fine of not more than $50, and in default of payment thereof to be imprisoned in the county jail for a period not more than 30 days. [Ordinance adopted May 29, 1911.]

ST. PAUL, MINN.

COMMON DRINKING CUP—PROHIBITED IN PUBLIC PLACES.

Section 1. That the use of a common or public drinking cup or receptacle for drinking water in any hotel, restaurant, victualing house, theater, factory, store, office building, school, public hall, railway station, railway car, or in any public place in the city of St. Paul, or the furnishing of such common drinking cup or receptacle for use in any such place, is hereby prohibited.

Sec. 2. Any person violating the terms of this ordinance shall be guilty of a misdemeanor, and upon conviction thereof shall be subject to a fine of not less than $5 nor more than $25, nor by imprisonment for not less than 5 days nor more than 25 days. [Ordinance adopted May 16, 1911.]

SEATTLE, WASH.

SWIMMING POOLS AND NATATORIUMS—REGULATION OF.

Section 1. It shall be and it is hereby declared unlawful for any person to conduct, manage, or maintain any natatorium, swimming pool, or tank in the city of Seattle, or for any person to bathe in or use any such natatorium, swimming pool, or tank without complying with all the requirements, rules, and regulations in this ordinance contained for the protection and safety of the health and lives of the patrons of such natatoriums, pools, or tanks. The commissioner of health of the city of Seattle, or his duly authorized agents, are hereby charged with the enforcement of the provisions of this ordinance.

Sec. 2. All pools or tanks shall be thoroughly cleaned at least once each week in a manner and by the use of such disinfecting agents or cleansing materials as may be required by the commissioner of health, and all such pools or tanks shall be emptied and the water therein completely changed at least twice each week.

Sec. 3. The sides and bottoms of all pools or tanks shall be white, so that objects may be clearly seen, so far as possible, in all portions of the pool or tank.

Sec. 4. The management of all natatoriums, swimming pools, or tanks shall provide a sufficient number of attendants, instructors, and life savers, with qualifications and training sufficient to enable them in case of necessity to protect and save the lives of those using such pools or tanks: *Provided*, That the provisions of this section shall not apply to clubs and athletic institutions patronized by members only: *Provided, however*, That such institutions shall have attendants and swimming instructors on duty at all times while women and children, under the age of 16 years, are using the pools or tanks therein; but no child under the age of 12 years shall be permitted to use or occupy any pool or tank, whether open to the public generally or not, unless accompanied by a parent or other mature and responsible person.

Sec. 5. No intoxicated person, or one afflicted with tubercular abscesses, venereal or other infectious or contagious disease, shall use or be permitted to use any swimming pool or tank.

Sec. 6. No person shall use, or be permitted to use, any pool or tank while the same is being emptied, or refilled, or while the same is empty, and no patron shall be allowed in or about the same at such time.

Sec. 7. All chutes constructed and used in or above any swimming pool or tank shall be constructed in a safe and proper manner, and no person shall slide down such chute while standing or in a kneeling position.

Sec. 8. All swimming pools or tanks shall be provided with a mechanical filter satisfactory to the commissioner of health, cuspidors shall be kept and maintained in all dressing rooms and at the edge of all pools, and gutters shall be constructed at the edge of all pools or tanks of such depth and of such design as will effectually prevent water or other matter from flowing or falling into such pool or tank.

Sec. 9. All persons before entering any swimming pool or tank shall be required to thoroughly cleanse the body through the use of the shower or other similar device maintained and used for such purpose.

Sec. 10. That all the provisions of this ordinance requiring changes or alterations in construction in natatoriums, swimming pools, or tanks, and the installation of filters, shall be carried out as required by the commissioner of health, but all such changes, alterations, and installations must be made and fully completed and installed within six months from the time of the taking effect of this ordinance.

Sec. 11. That hereafter, before the construction of any natatorium, swimming pool, or tank, the plans and specifications for such structure shall be submitted to and approved by the commissioner of health before a permit therefor shall be issued by the building department.

Sec. 12. No patron, attendant, instructor, or other person while bathing or while engaged or working in or about any pool or tank shall smoke or chew tobacco in any form, and it shall be unlawful for any person to expectorate in the water of any tank or pool, or to blow the nose therein, or in or at any other place than in cuspidors provided for such purpose, and conspicuous signs shall be posted in all such natatoriums, pools, or tanks calling attention to the fact that spitting is prohibited except in the cuspidors and showing the places where such cuspidors are located.

Sec. 13. That a copy of this ordinance shall be posted, and kept posted, in a conspicuous place in all natatoriums, swimming pools, and tanks for the guidance and information of the public and patrons of such places.

Sec. 14. That any person violating or failing to comply with the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction shall be fined in any sum not exceeding $100, or shall be imprisoned in the city jail for a term not exceeding 30 days, or may be both fined and imprisoned.

Sec. 15. This ordinance shall take effect and be in force 30 days from and after its passage and approval, if approved by the mayor; otherwise it shall take effect at the time it shall become a law under the provisions of the city charter. [Ordinance passed May 15, 1911.]

SYRACUSE, N. Y.

GARBAGE AND REFUSE—CARE AND COLLECTION.

Sec. 7. Subdivision A. Every owner, lessee, or occupant of any building, premises, or place of business shall provide, or cause to be provided, and at all times keep, suitable and sufficient receptacles for receiving and holding all garbage that may accumulate from said building, place of business, or upon said premises or the portion thereof where they may reside. No such receptacle shall be kept on any sidewalk or in any public place longer than may be necessary for the removal of the contents thereof, and all receptacles designed for the reception of garbage shall be provided with proper covers and at all times shall be kept securely closed. Unless kept within private grounds of residences and sufficiently removed from adjoining premises to prevent any offense, the receptacles herein mentioned shall be kept in such places as the commissioner may direct. Said receptacles shall be used only for garbage; ashes and rubbish shall be excluded therefrom.

No vehicle for carrying offal, swill, garbage, or rubbish, the contents of any cesspool or sink, or any manure, or other nauseous substances, except when actually engaged in collecting such materials, shall stand before any residence, building, or place of business; nor shall any such vehicle occupy an unreasonable length of time in loading or unloading, or in passing along any street or inhabited place. When not in use, all such vehicles, and all implements used in connection therewith, shall be stored and kept in some place where no needless offense shall be given the public. All such vehicles, and all receptacles therewith, shall be strong, tight, and covered, and the sides shall be so high above the load that no part thereof shall leak or spill. [Ordinance adopted Mar. 27, 1911.]

TRENTON, N. J.

GARBAGE—REMOVAL.

Sec. 81. That no person shall dump any garbage in any public highway, road, street, avenue, yard, lot, or alley within this city.

Sec. 82. That every person who shall convey any garbage or solid or liquid refuse through or along any street within this city shall use a cart, carriage, or other means of conveyance properly constructed, to be approved by the health officer, and furnished with a sufficient covering so as to prevent the escape of the contents thereof.

Sec. 83. That if in the process of removal any person shall slop or spill, or cause or allow to fall upon any footway, pavement, or carriageway within this city, any garbage, solid or liquid refuse, he shall forthwith remove the same from the place whereon the same may have been slopped or spilled, or may have fallen, and shall immediately thereafter thoroughly sweep or otherwise thoroughly cleanse such place. [Art. I, Sanitary Code, adopted Aug. 1, 1910.]

KINGSTON, N. Y.

BIRTH AND DEATH CERTIFICATES—BURIAL PERMITS.

Sec. 14. *Births.*—It shall be the duty of every physician or midwife attending at the birth of a child, and no physician or midwife being in attendance, the parent or custodian of a child born, to make a certificate of such birth and cause the same to be returned within 36 hours after such birth to the local board of health or person designated by it to receive the same; which said certificate shall be attested by the physician or midwife, if any in attendance, and no physician or midwife being in attendance, by the parent or custodian of a child born, and such certificate shall be made upon the form prescribed by the State department of health. The physician or midwife attending at the birth of a child shall, at the time of filing such certificate of birth, unless it contains the given name of such child, cause to be furnished to the parents or custodian of such child, a name card, which shall be filled in by such parent or custodian with the given name of such child when named, and immediately filed in the same office where certificates of birth are filed. Such blank name cards shall be furnished by the secretary of this board of health without expense, to any person requesting the same.

Sec. 15. *Burial and burial permits.*—Every undertaker, sexton, or other person having charge of any corpse shall procure a burial permit from the local registrar with whom the certificate of death has been filed, or the health officer of the town or municipality, and there shall be no burial or removal of a corpse until a certificate of death has been filed as required by law and the sanitary ordinances of this city, and a burial or transit permit issued; such burial or transit permit shall be obtained at least 6 hours before the time appointed for the funeral of such corpse.

Sec. 16. *Deaths.*—It shall be the duty of the physician last in attendance upon any person who may die to fill out a certificate of the death and the probable cause of the same upon the form prescribed by the State department of health, and duly certify to same and deliver the certificate to the local registrar of vital statistics within 24 hours after the death occurs. In case an inquest is required by law, the coroner or the coroner's physician shall fill out the said certificate, and if no inquest is required and no physician was in attendance at the time of death or immediately prior thereto, the health officer of the municipality or his medical assistant, if any, shall fill out and file the said certificate.

Punishment for violation of foregoing sections.—Any person violating any of the provisions of the foregoing sections of the sanitary ordinances of the city of Kingston, shall be deemed and is hereby declared guilty of a misdemeanor, and upon conviction thereof shall be punished in accordance with the provisions of section 1740 of the penal law of the State of New York. [Amendment of sanitary ordinances adopted by board of health Aug. 9, 1910.]

READING, PA.

BIRTHS, MARRIAGES, AND DEATHS—CERTIFIED COPY OF RECORD TO BE FURNISHED.

RULE 32. A certified copy of the record of the birth, marriage, or death of any person shall be furnished by the secretary upon payment of the sum of 50 cents by the party applying for said certificate, provided that children seeking employment, who must prove their age in order to obtain working certificates, shall be granted birth certificates free of charge. For any search of the records when no certified copy is made the secretary shall charge a fee of 10 cents except in cases of public officials requiring information from the records in the discharge of their duties. [Regulations. board of health, adopted May 15, 1911.]

DISINTERMENTS.

RULE 31. The remains of any body buried within the city of Reading shall not be disinterred without first obtaining a permit from the secretary of the board of health, for which the sum of 25 cents shall be paid. No disinterment permits shall be granted during the period from April 1 to October 15.

No disinterment of any body dead of anthrax, Asiatic cholera, relapsing fever, yellow fever, epidemic, cerebrospinal meningitis, or cerebrospinal fever, scarlet fever, diphtheria, or membraneous croup shall be made within 10 years from the date of the original burial of the same, and no disinterment of any body dead of smallpox shall be made at any time. All disinterments must be made within 72 hours from the date of the issue of the permit, between sunrise and sunset, and the remains of any disinterred body shall not be exposed to view. [Regulations, board of health, adopted May 15, 1911.]

SYRACUSE, N. Y.

BIRTH AND DEATH CERTIFICATES, BURIAL AND TRANSFER PERMITS.

SECTION 6, SUBDIVISION A. All births shall be duly reported to the commissioner within 36 hours after the event, and all deaths within 24 hours; the facts to be stated legibly and fully upon blanks furnished by the commissioner. Such report shall be made by the physician, midwife, nurse, or parent in case of birth, and by the physician, undertaker, sexton, coroner, or any other person with knowledge of the facts in case of death.

SUBD. C. *Undertaker.*—No dead body of any human being shall be buried or be removed for the purpose of burial, unless accompanied to its burial place by a burial or transit permit issued by the commissioner upon receipt of a full, complete, and legible death certificate of the deceased signed by the physician who last attended upon the deceased or by one of the coroners of the county. Bodies brought to the city from other places shall not be received for burial in any cemetery until the commissioner shall have issued and indorsed the burial permit. No physician shall issue any certificate of death under this ordinance or the laws of this State unless he was the medical attendant on the person named in said certificate during his or her last illness, provided said person died from natural causes. No person other than the said physician shall make such certificate. Under no circumstances shall an undertaker fill out in a death certificate the part required of him, except when the full name of the deceased has been written in ink thereon at the proper place by the attending physician or the coroner of this county. The keeper of every cemetery shall demand and receive from the undertaker said burial permit before the body is allowed to be buried. No dead body shall be kept unburied longer than four days without a permit from the commissioner. [Ordinance, adopted Mar. 27, 1911.]

TRENTON, N. J.

MARRIAGES, BIRTHS, AND DEATHS—NOTIFICATION OF.

SECTION 73. Every minister of the gospel, justice of the peace, or other person having authority to solemnize marriages, before whom, and the clerk or keeper of the minutes of every religious society before which any marriage shall be solemnized in this city, shall transmit to the registrar of vital statistics of this city the marriage license, together with the certificate of marriage, in writing, of every such marriage within five days after the same shall have been solemnized. Any minister, magistrate, or other person or clerk or keeper of the minutes of any religious society, institution, or organization who shall neglect or fail to transmit such certificate and license to the registrar of vital statistics within the time aforesaid shall be liable to a penalty not exceeding $50.

SEC. 74. That every physician or midwife, in case no physician or midwife be present then the parent of any such child born in this city, shall report in writing to said registrar of vital statistics within five days thereafter the following particulars, as far as known: The day of the month and the year of the birth, the precise place of residence, the name of both parents, the maiden name of the mother, the birthplace, residence, occupation, age, and color of the parents; the sex and color of the parents, the sex and color of the child and its name, if it be named, also the name of the attending physician or midwife. And every such physician, midwife, or parent who shall refuse or neglect to make such report within the time aforesaid shall forfeit and pay a penalty of $50 for every such offense.

SEC. 75. That the physician who may have attended during his or her last illness any person dying within the city shall, within 12 hours after the death of such person, furnish the undertaker or any member of the family applying therefor, a certificate in writing of the death of said person, which certificate shall show the name, age, sex, color, nativity, occupation, conjugal condition, last place of residence, the names and country of birth of each of the parents of the decedent, place of death and the cause of death, and length of sickness, to the best of his knowledge. And any such physician who fails to furnish the certificate required by this section shall forfeit and pay a penalty of $50 for every such offense.

SEC. 76. That every undertaker who shall have received any such certificate mentioned in the next preceding section, and who shall superintend the burial of the person named therein within this city shall, within five days after the burial of the person named therein, present such certificate to the said registrar of vital statistics. And any such undertaker who fails to present such certificate within the time aforesaid shall forfeit and pay a penalty of $50 for every such offense.

SEC. 77. That on the receipt of any information respecting the neglect or failure to make return of any birth, death or marriage, by any physician, midwife, clergyman, magistrate, or other person professionally officiating at such death, birth, or marriage, within this city, the health officer, or other persons acting under and by authority of this board, shall make inquiry respecting such neglect or failure, and report thereon to this board at the meeting which shall be held next after the receipt of such information. [Art. I, sanitary code, adopted Aug. 1, 1910.]

BERKELEY, CAL.

INTERMENT OF BODIES—PROHIBITED WITHIN THE CITY.

SECTION. 1. It shall be unlawful for any person, association, or corporation to bury or inter, or cause to be buried or interred, the dead body of any person in any place in the city of Berkeley, or to maintain a cemetery or graveyard, within the limits of the city of Berkeley.

SEC. 2. Any person, association, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine not to exceed $300 or by imprisonment not exceeding 3 months, or by both such fine and imprisonment. Any judgment imposing a fine may provide for its satisfaction by imprisonment in the county jail for the time, at the rate and in the manner provided by law.

SEC. 3. This ordinance shall take effect and be in force 30 days from and after its final passage. [Ordinance in effect Aug. 30, 1910.]

LOS ANGELES, CAL.

MORGUES AND UNDERTAKING ESTABLISHMENTS.

SECTION 1. It shall be unlawful for any person, firm, or corporation to establish, conduct, maintain, or use, or to cause or permit to be established, conducted, maintained, or used, any morgue or undertaking establishment in the city of Los Angeles without first obtaining a permit in writing so to do from the board of health of said city. No such permit shall be granted by said board except upon the written application of the person, firm, or corporation desiring the same, filed with said board, stating the place where such morgue or undertaking establishment is to be located; and no such permit shall be granted to any person, firm, or corporation to conduct, establish, or maintain a morgue or undertaking establishment unless there shall be first filed with the said board the written consent to the granting of such permit of the owners and tenants of the frontage of the property on the side of the street within 100 feet on each tide of the lot or parcel of land on which such morgue or undertaking establishment is proposed to be established, conducted, or maintained.

In the event that such morgue or undertaking establishment is proposed to be located on a corner lot, the person, firm, or corporation desiring to establish, conduct, or maintain such morgue or undertaking establishment shall first file with said board, before obtaining such permit, the written consent to the granting of such permit of the owners and tenants of the frontage of the property fronting on the side of each street, and within 100 feet on each side of such lot, upon which such morgue or undertaking establishment is proposed to be established, conducted, or maintained.

SEC. 2. The board of health is hereby authorized and empowered to revoke the permit of any person, firm, or corporation issued under the provisions of this ordinance whenever it shall appear to said board that the person, firm, or corporation to whom such permit is granted is maintaining, conducting, or using said morgue or undertaking establishment in an unsanitary or unlawful manner.

SEC. 3. Nothing contained in section 1 of this ordinance shall be deemed to apply to any morgue or undertaking establishment which shall have been established and is being conducted or maintained at the time this ordinance becomes effective which when so established was located at a distance of more than 100 feet of any church, schoolhouse, residence or dwelling house.

SEC. 4. That ordinance No. 8076 (new series), entitled "An ordinance concerning morgues and undertaking establishments," approved February 19, 1903, be, and the same is hereby, repealed; provided that such repeal shall not affect or prevent the prosecution and punishment of any person, firm, or corporation for any act done or permitted in violation of any provision of said ordinance which is repealed by this ordinance, and shall not affect any prosecution or action which may be pending in any court for the violation of the ordinance repealed by this ordinance.

SEC. 5. That any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable by a fine of not less than $5 nor more than $500, or by imprisonment in the city jail for a period of not less than five days nor more than six months, or by both such fine and imprisonment. [Ordinance adopted Jan. 24, 1911.]

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 4,310 acres of land in Alameda County were covered with poison during the week ended December 23, 1911.

During the same period 11,880 acres of land in San Joaquin County and 14,240 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 sqirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Dec. 23, 1911	1	[1] 139	76	
Fresno	do		[2] 81	81	
Oakland	do	13	[3] 507	410	
San Francisco	do	12	[4] 1,520	1,095	
Counties—					
San Joaquin	do		[5] 102	102	
Santa Clara	do		[6] 108	108	
Washington:					
City—					
Seattle	do		1,041	892	

[1] Identified: Mus norvegicus, 77; Mus rattus, 0; Mus musculus, 62.

[2] Identified: Mus alexandrinus, 69; Mus musculus, 1; unidentified, 11.

[3] Identified: Mus norvegicus, 422; Mus musculus, 85.

[4] Identified: Mus norvegicus, 703; Mus rattus, 203; Mus musculus, 423; Mus alexandrinus, 191.

[5] Identified: Mus norvegicus, 102.

[6] Identified: Mus norvegicus, 108.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Shot or trapped.	Found dead.	Examined.	Found infected.
California:					
Counties—					
Alameda	Dec. 23, 1911		56		
Stanislaus	do	20		20	
Total		20	56	20	

OTHER ANIMALS COLLECTED AND EXAMINED.

Place.	Week ended—	Animals collected.	Examined.	Found infected.
California:				
County—				
Stanislaus	Dec. 23, 1911	2 rabbits	2	
Total			2	

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED JAN. 12, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
California:				
Counties—				
Los Angeles	Nov. 1-30	6	3	
Riverside	do	2		
Sacramento	do	1		
San Diego	do	1		
San Francisco	do	1		
Santa Clara	do	3		
Santa Cruz	do	1		
Total for State		15	3	
Kansas:				
Counties—				
Bourbon	Oct. 1-31	1		
Cloud	do	2		
Cowley	do	24		
Greely	do	4		
Kearny	do	1		
Leavenworth	do	1		
Marshall	do	3		
Riley	do	4		
Shawnee	do	6	1	
Wyandotte	do	2		
Total for State		48	1	
Massachusetts:				
Counties—				
Hampden	Dec. 1-31	2		
Middlesex	do		1	
Suffolk	do		1	
Total for State		2	2	

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended Jan. 12, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Montana:				
Counties—				
Cascade	Sept. 1-30	5		
Deerlodge	do	11		
Missoula	do	1		
Silverbow	do	1		
Total for State		18		
Cascade	Oct. 1-31	5		
Missoula	do	1		
Total for State		6		
Cascade	Nov. 1-30	7		
Flathead	do	1		
Missoula	do	4	1	
Sanders	do	3		
Silverbow	do	1		
Total for State		16	1	
Tennessee:				
Knoxville	Dec. 17-30	7		
Washington:				
Counties—				
Benton	Oct. 1-31	1		
King	do	2		
Pend Oreille	do	3		
Pierce	do	14		
Skagit	do	1		
Spokane	do	26		
Stevens	do	1		
Walla Walla	do	1		
Yakima	do	1		
Total for State		50		

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discon-contined, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED DEC. 23, 1911.

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	168	30	2	6		24	1			31	19	10	4
Boston, Mass	670,585	189	59	4	82		28	2			61	17	7	1
Chicago, Ill	2,185,283	623	166	15	72	1	116	5			143	70	31	7
Cleveland, Ohio	560,663	145	35	4	40		25	3			17	7	4	
New York, N. Y	4,766,883	1,310	275	23	477	5	177	8			458	171	67	14
Philadelphia, Pa	1,549,008	465	81	13	8		25	1			61	54	21	3
Pittsburgh, Pa	533,905	142	45	6	7		24				25	13	15	2
St. Louis, Mo	687,029	215	34	1	11		19				40	28	2	1
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	131	47	1	19		14				19	12	12	1
Cincinnati, Ohio	364,463	98	14	3			18		2		32	12		
Detroit, Mich	465,766	137	30	3			22		3					
Los Angeles, Cal	319,198	111	8		2		10		4		22	18	4	2
Milwaukee, Wis	373,857		15	1	12	1	24	3			15	3	20	2
Newark, N. J	347,469	91	35	1			13				22	13		1
New Orleans, La	339,075	124	4	1	1		10		2		15	14	2	4
San Francisco, Cal	416,912	165	2		77	1	5				9	11	2	1
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	49	14	1	2		9		1					6
Jersey City, N. J	267,779	83	7	1			3		1		9	10	1	
Kansas City, Mo,	248,381		2		1				1		5	13		2
Providence, R. I	224,326	65	21		7	1	9		1			7	4	1
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	28	3				1				4		1	
Cambridge, Mass	104,839	38	7		1		6				5	3	1	
Columbus, Ohio	181,548	63	10	1	9		10				4	6	1	1
Dayton, Ohio	116,577	36	4									1	2	
Fall River, Mass	119,295	28	9	1	1						2	6	5	
Grand Rapids, Mich	112,571	33		1			2				2	3	1	
Lowell, Mass	106,294	33	1	1	13	2	12				2		1	
Nashville, Tenn	110,364	35	1				1				3	2	1	
Oakland, Cal	150,174	38	1		1		2				2	3	1	
Omaha, Nebr	124,096	26	1		1		1				1			
Spokane, Wash	104,402		1		5		2		10			1		
Toledo, Ohio	168,497	51	13	2	3		8				1	6	3	2
Worcester, Mass	145,986	36	7	2			10				4	1		
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127		2								1		1	
Bayonne, N. J	55,545		2		2		7	3			1	2		
Brockton, Mass	56,878	8			20		1				6		1	
Camden, N. J	94,538		4				2					1		
Duluth, Minn	78,466	15	1				3		5		2	2	1	
Elizabeth, N. J	73,409	20	3		3	1	3				2	1	2	
Evansville, Ind	69,647	16	1		1							3	6	
Harrisburg, Pa	64,186	23	7	1			1					2		
Hartford, Conn	98,915	36	7	1			9					2		
Hoboken, N. J	70,324		2	1							1			
Johnstown, Pa	55,482	20	3	1	3		1				1	3	3	1
Kansas City, Kans	82,331	4							2		1		2	
Lawrence, Mass	85,892	25			1		3				1	4	1	
Lynn, Mass	89,336	13	1		1		2				3	1		
Manchester, N. H	70,063	24	7		6		3				4	4		
New Bedford, Mass	96,652	25	1		12		3				4	1	4	2
Oklahoma City, Okla	64,205	9	2		1		2					1		
Passaic, N. J	54,773	15	4				2				1	1		

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Dec. 23, 1911—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
***Cities having from 50,000 to 100,000 inhabitants*—Con.**														
Pawtucket, R. I	51,622											3		
Reading, Pa	96,071	22	7	1	1		4						3	
San Antonio, Tex	96,614	29	2		1		2					5	1	
Schenectady, N. Y	72,826	20	2		1						3			
South Bend, Ind	53,684		1									2	2	
Springfield, Ill	51,678	22	4	1	1		1		1			1	1	1
Springfield, Mass	88,926	37	2	1	19	1	4				3	5	2	
Terre Haute, Ind	58,157	15	4	1	1		1				5	2	1	
Trenton, N. J	96,815	37	6	1			1				10	4	6	4
Wilkes-Barre, Pa	67,105	21	7		165	1	2				4		1	
Wilmington, Del	87,411	37										2		2
Yonkers, N. Y	79,803	23	6	1	2		10				6	2	1	
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150		3		2									
Auburn, N. Y	34,668	14	1	1							1	2		
Aurora, Ill	29,807	8												
Berkeley, Cal	40,434	9	1											
Binghamton, N. Y	48,443	15	1	1	1								1	
Brookline, Mass	27,792	5												
Butte, Mont	39,165	17	2				3					2		1
Chattanooga, Tenn	44,604												2	
Chelsea, Mass	32,452	17	1	1	2		3				1	1		
Chicopee, Mass	25,401	6	1								1			
Danville, Ill	27,871	8	3				1					2		
Dubuque, Iowa	38,494	10	5	1										
East Orange, N. J	34,371	5	2				1					1	1	
Elmira, N. Y	37,176	11	2	1										
El Paso, Tex	39,279	26					4	1	3	1	1	9		
Everett, Mass	33,484	4	3				4				2			
Haverhill, Mass	44,115	15			17						2		1	
La Crosse, Wis	30,417		6	1					1					
Lancaster, Pa	47,227		6				1							
Lexington, Ky	35,099	11	3		3		1					1		
Lima, Ohio	30,508	4	3				2							
Lynchburg, Va	29,494	18	1				8						2	
Malden, Mass	44,404	6	2		1		2				3	1		
McKeesport, Pa	42,694	12	1	1		1					1		3	2
Montgomery, Ala	38,136	15	1						2				1	1
Mount Vernon, N. Y	30,919				20		1				2		1	
Newcastle, Pa	36,280		15		2								17	
Newport, Ky	30,309	10	1				1		1		3	3	1	1
Newton, Mass	39,806	6	2	1										
Niagara Falls, N. Y	30,445	9	3				1					1	2	1
Norristown, Pa	27,875	2			9									
Orange, N. J	29,630	8	3	1			5				1		2	
Pasadena, Cal	30,291	8										1		
Pittsfield, Mass	32,121	7	4								1			
Portsmouth, Va	33,190	10	1				2		1					
Racine, Wis	38,002	8	4				1							
Roanoke, Va	34,874	7	4		10		2				7	1	2	
Rockford, Ill	45,401	10					1					1	7	
Salem, Mass	43,697	11	1				2						1	
San Diego, Cal	39,578	3								1				
South Omaha, Nebr	26,259	6	2											
Superior, Wis	40,384	5	4						7					1
Taunton, Mass	34,259	13					1					2		
Waltham, Mass	27,834	9					1				1			
West Hoboken, N. J	35,403		1		1		1						2	
Wheeling, W. Va	41,641	14	7								3	1	3	
Williamsport, Pa	31,860	11	2		1									
Wilmington, N. C	25,748	11					1		2			2	3	
York, Pa	44,750		3	2							2		3	1
Zanesville, Ohio	28,026	8	7								1	1		

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Dec. 23, 1911—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	4									3			
Beaver Falls, Pa	12,191	8	7	2			1						7	1
Bennington, Vt		2	1											
Braddock, Pa	19,357	6	2				2							
Butler, Pa	20,782	6	2											
Cambridge, Ohio	11,327	4										2	1	
Camden, S. C		3												
Carbondale, Pa	17,040	1	2											
Clinton, Mass	13,075	2												
Coffeyville, Kans	12,687						2						1	
Columbus, Ga	20,554	5												
Concord, N. H	21,497	8										1		
Cumberland, Md	21,839	9	1								2		7	
Dunkirk, N. Y		0					1						3	
Galesburg, Ill	22,089	2							1					
Harrison, N. J	14,498	4	1						1					
Hyde Park, Mass	15,507	2					2							
Kearny, N. J	18,659	3	1		2						2		1	
Kokomo, Ind	17,012	12							4			3		
La Fayette, Ind	20,081	5			1							2		
Lebanon, Pa	19,240		4								1			
Manistee, Mich	12,381		2	1			14							
Marinette, Wis	14,610	2			9							1	2	
Marlboro, Mass	14,579	3												
Massillon, Ohio	13,879	0	2				1							
Medford, Mass	23,150	5	3	1								1		
Melrose, Mass	15,715	8			1							1		
Moline, Ill	24,199	9	5									1	1	
Mont Clair, N. J	21,150	3	1								2			
Morristown, N. J	12,507	3	1		1		1				1		2	
Nanticoke, Pa	18,857	5			24									
Newburyport, Mass	19,240	4												1
North Adams, Mass	22,012	5												
Northampton, Mass	19,431	3									2	1	1	
Ottumwa, Iowa	22,012	5	1	1			1				1			
Peekskill, N. Y		3									1	1		
Plainfield, N. J	22,550	4			1		1				2			
Pottstown, Pa		13					1					2		
Saratoga Springs, N. Y		5												
South Bethlehem, Pa	19,973	7			1							1		
Steelton, Pa	14,246	1	10	1					1		2			
Wilkinsburg, Pa	18,924	4	1				3					1		
Woburn, Mass	15,308	3					2							

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

Florida.—Week ended December 23, 1911. Reports to the State board of health show diphtheria present in 5 localities with 9 cases, malaria in 3 localities with 8 cases, smallpox in 1 county (Sumter) with 2 cases, tuberculosis in 7 localities with 9 cases, typhoid fever in 7 localities with 10 cases.

New Jersey.—Month ended December 10, 1911. Population, 2,537,167. Total number of deaths from all causes 2,791, including diphtheria 51, measles 1, scarlet fever 1, tuberculosis 318, typhoid fever 34.

PENNSYLVANIA.—Mortality. Reports from the State department of health show as follows: Month of August, 1911. Total number of deaths reported 9,388, including typhoid fever 170, scarlet fever 28, diphtheria 73, measles 19, whooping cough 92, influenza 15, malaria 1, tuberculosis of the lungs 682, tuberculosis of other organs 136, cancer 444, diabetes 60, meningitis 52, acute anterior poliomyelitis 10, pneumonia 345, diarrhea and enteritis (under 2 years) 1,814, diarrhea and enteritis (over 2 years) 179, Bright's disease 469, early infancy 736, suicide 85, accidents in mines 89, railway injuries 96, other forms of violence 477, all other diseases 3,316.

Month of September, 1911. Total number of deaths 8,666, including typhoid fever 201, scarlet fever 26, diphtheria 147, measles 17, whooping cough 57, influenza 12, malaria 5, tuberculosis of the lungs 607, tuberculosis of other organs 128, cancer 439, diabetes 75, pellagra 1, meningitis 39, acute anterior poliomyelitis 9, pneumonia 437, diarrhea and enteritis (under 2 years) 1,266, diarrhea and enteritis (over 2 years) 129, Bright's disease 442, early infancy 681, suicide 85, accidents in mines 96, railway injuries 114, other forms of violence 382, all other diseases 3,271.

FOREIGN AND INSULAR.

AUSTRIA-HUNGARY.

Status of Cholera.

According to information received from Ambassador Kerens at Vienna, 11 new cases of cholera were reported in Hungary during the period from November 12 to 18, 1911. The cases occurred at five localities.

BULGARIA.

Quarantine Restrictions against Cholera Removed.

Consul General Harvey at Bucharest reports: According to information received from the Bulgarian foreign office the restrictions that have been in force against travelers and products arriving from Turkey, Roumania, Italy, and Austria-Hungary on account of cholera were removed November 22, 1911.

CHINA.

Measures to Protect the Railway Zone against Plague.

Counsel Maynard at Harbin reports November 6: In order to safeguard the railway zone, the manager of the Chinese Eastern Railway has issued orders that thermometrical examinations shall be made at Manchuria station of all third and fourth class passengers eastbound from the Transbaikal Province.

Dr. Morieff, chairman of the branch sanitary executive committee at Manchuria Station, has telegraphed that patrols have been stationed on all roads which lead to villages, and two examination stations have been established for persons traveling on foot or in carts, and in addition to this six horse patrols have been organized. Beyond the railway zone the roads are patrolled by Chinese who transfer all travelers to the Russian horse patrols, who in turn conduct them to the examination stations.

The branch sanitary executive committee at Hailar have requested permission to establish at Manchuria Station a detention camp, in order to conduct a five-days' observation for travelers from points between Karimskaya and Manchuria Station, and to provide 10 fenced-in heated cars for observation and isolation at Hailar Station to facilitate the inspection of freight and passenger trains arriving at Hailar at night. In addition to this they request that the medical staff at Hailar Station be augmented by the addition of 8 assistant physicians, this number being required for the inspection of the population in the neighboring villages.

ECUADOR.

Plague and Yellow Fever.

The following statement with regard to plague and yellow fever in Ecuador was received from the director of public health for the period, November 15–30, 1911:

Plague.—At Guayaquil, 46 cases with 19 deaths.

Yellow fever.—At Bucay, 2 cases; at Guayaquil, 8 cases with 4 deaths; at Milagro, 1 case.

And for the period, December 1–30, 1911:

Plague.—At Guayaquil, 56 cases with 23 deaths.

Yellow fever.—At Bucay, 1 death; at Duran, 3 cases with 2 deaths; at Milagro, 7 cases with 1 death.

GIBRALTAR.

Restrictions Against Palermo on Account of Cholera Removed.

The following notice was issued December 6, 1911, by the secretary of the board of health:

> With reference to the board of health notice of July 3 last, it has been decided by the board that arrivals from Palermo shall be admitted to free pratique.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910. The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911.

The last plague-infected rat was found at Honokaa December 18, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports, December 18:

Week ended Dec. 16, 1911.

Total rats and mongoose taken	470
Rats trapped	463
Mongoose trapped	7
Rats examined bacteriologically	404
Classification of rats trapped:	
Mus alexandrianus	63
Mus musculus	71
Mus norvegicus	27
Mus rattus	302
Average number of traps set daily	1,720

INDIA.

Madras—Cholera.

Consul Olivares reports November 28: During the week ended November 25, 1911, 82 cases of cholera with 65 deaths were reported in the city of Madras, as compared with 100 cases with 74 deaths reported during the previous week. The disease continues to be prevalent throughout the city and to be present among all classes of the population. Of the 82 cases reported 69 were Hindus. A continued decrease in the epidemic is reported from the district of Madura, 15 cases with 12 deaths having been reported for the week, as compared with 61 cases with 36 deaths reported during the previous week.

ITALY.

Status of Cholera.

During the period from November 26 to December 2, 1911, 51 cases of cholera with 34 deaths were officially reported in Italy. These figures show a decrease of 26 cases with 5 deaths from the number reported for the previous week. All the cases reported occurred in the island of Sicily. The rest of the Kingdom of Italy is considered free from cholera.

Naples—Examination of Emigrants.

Surg. Geddings reports:
Vessels inspected during the week ended December 16, 1911:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Dec. 10	San Guglielmo	New York	429	110	730
12	Caronia	do			
12	Duca di Genova	do	645	120	850
13	San Giovanni	do	66	5	80
15	Venezia	do	210	55	280
	Total		1,350	290	1,940

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Dec. 13	San Giovanni	New York	343	150	200
16	Venezia	do	160	150	225
	Total		503	300	425

JAPAN.

Infectious Diseases in Kanagawa Ken.

Surg. Irwin at Yokohama reports December 4: In Kanagawa Ken 378 cases of diphtheria, 240 of dysentery, 79 of scarlet fever, 2 of smallpox, and 555 of typhoid fever were reported present November 29, 1911.

MONTENEGRO.

Cholera.

The following information was received from the royal ministry of foreign affairs at Cettinge: During the period from November 1 to 10, 1911, 9 cases of cholera with 5 deaths were reported in Montenegro. The cases occurred in 5 localities.

ROUMANIA.

Constanta Declared Free from Cholera.

Consul General Harvey reports: According to information received from the Roumanian foreign office the town and district of Constanta were declared free from cholera December 12, 1911, no new case having been reported since November 6. The last remaining case was discharged November 23, 1911.

TUNIS.

Status of Cholera.

According to information received from the ministry of foreign affairs at Paris, 371 deaths from cholera were reported in the regency of Tunis during the period from November 16 to 24, 1911, and from November 25 to December 7, 1911, 210 deaths.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED JAN. 12, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Croatia and Slavonia				Total Oct. 22-Dec. 3: Cases, 31.
Sriem	Oct. 22-Dec. 3	31		
Hungary				Total Nov. 19-Dec. 9: Cases 16.
Torontal	Nov. 19-Dec. 9	16	2	
Italy				Dec. 3-9: Cases, 27; deaths, 14.
Provinces—				
Caltanisetta	Dec. 3-9	3	3	
Girgenti	do	24	11	
Malta	Dec. 3-10	2	2	
Montenegro	Nov. 4-11	9	5	
Tunis Regency				Total Nov. 25-Dec. 7: Cases 169; deaths, 210.
Beja district	Nov. 25-Dec. 7	30	35	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia:				
Kharput	Nov. 19-Dec. 9	29	22	
Mersine	Dec. 1-7	1	1	
Turkey in Europe:				
Constantinople	Oct. 24-30	5	1	
Saloniki vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Para	Dec. 9-16	1	1	
Ecuador:				
Duran	Dec. 1-15	3	2	
Guayaquil	do	12	7	
Milagroro	do	7	1	
Venezuela:				
Sabana Grande	Dec. 12			Epidemic.

PLAGUE.

Brazil:				
Rio de Janeiro	Nov. 26-Dec. 2	1	1	
Ecuador:				
Guayaquil	Dec. 1-15	56	23	
Russian Empire:				
Astrakhan, government	Nov. 28-Dec. 20	87	84	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended Jan. 12, 1912.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	do		25	
Austria-Hungary:				
Trieste	Dec. 3-9	1		
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Nov. 15		179	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Dec. 2	1	1	
Canada:				
British Columbia—				
Nelson	Dec. 24-30	1		
Ontario—				
Sarnia	Oct. 17-23	1		
Chile:				
Talcahuano	Nov. 26-Dec. 9	7	2	
Valparaiso	Dec. 3-9	43		
China:				
Chungking	Nov. 18			Present.
Hongkong	Nov. 19-25	7	4	
Cuba:				
Habana	Dec. 19	1		From German s. s. Frankenwald from Spain and Canary Islands.
Italy:				
Naples	Dec. 9-16	8		
Palermo	do	371	103	
Mexico:				
Aguascalientes	Dec. 18-24		1	
Coahuila, State	Oct. 1-30		16	
Mexico	Nov. 26-Dec. 9	4	2	
Russia:				
Moscow	do	2	2	
Odessa	Dec. 3-16	3		
St. Petersburg	Nov. 26-Dec. 9	13	5	
Spain:				
Valencia	Dec. 9-16	10	1	
Switzerland:				
Zurich, Canton	Dec. 3-9	1		From the Orient.
Teneriffe:				
Santa Cruz	Dec. 9-16		4	
Turkey in Asia:				
Beirut	do	10	3	
Constantinople	Dec. 18-24		4	
Uruguay:				
Montevideo	Sept. 1-30	6	2	
Do	Oct. 1-31	13	1	

REPORTS RECEIVED FROM DEC. 30, 1911, TO JAN. 5, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Bulgaria:				
Varna	Nov. 4-6	2	2	On s. s. Boris from Asia Minor.
Dutch East Indies				Total Sept. 24-Oct. 9, 1911: Cases, 322; deaths, 256.
Batavia	Nov. 12-18	6	2	
India:				
Calcutta	Nov. 5-11		39	
Italy				Total Nov. 26-Dec. 2: Cases, 51; deaths, 34.
Provinces—				
Caltanisetta	Nov. 26-Dec. 2	2	2	
Girgenti	do	45	29	
Messina	do	3	2	
Syracuse	do	1	1	
Malta	Nov. 19-Dec. 2	4	4	Dec. 23 declared free from cholera.
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 5, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	Nov. 19-Dec. 2		4	
Ecuador:				
Bucay	Nov. 16-30	2		
Guayaquil	do	8	4	
Milagro	do	1		
Mexico:				
Merida	Dec. 12-23	4	5	Total Aug. 1-Nov. 23: Cases, 47, deaths, 25.
Venezuela:				
Caracas	Nov. 16-Dec. 7	11		

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096. Vol. XXVI.
Brazil:				
Rio de Janeiro	Nov. 12-18	2		
Chile:				
Iquique	Nov. 12-25	1	2	
Dutch East Indies:				
Java—				
Pasoeroean Residency, Malang District.	Nov. 12-18	6	4	
Soerobaya	Oct. 17-27	2		
Ecuador:				
Guayaquil	Nov. 16-30	46	19	
Egypt:				
Provinces—				
Assiout	Oct. 14-Dec. 13	16	14	
Kena	Nov. 20-Dec. 13	3	3	
Minieh	Dec. 13	1		
India:				
Bombay	Nov. 19-Dec. 2	17	16	
Calcutta	Nov. 11		6	
Karachi	Nov. 26-Dec. 2		3	
Indo-China:				
Saigon	Nov. 13-19	3		
Mauritius	Nov. 3-9	4	4	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Straits Settlements:				
Singapore	Nov. 5-18	3	3	

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Canada:				
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-23	12		
Quebec—				
Montreal	Dec. 17-23	2		
Ontario	do	20		
Ceylon:				
Colombo	Nov. 12-18	1		
China:				
Canton	Nov. 11-25	15	3	
Hongkong	Nov. 12-18	9	6	
France:				
Marseille	Nov. 1-30		1	
Paris	Dec. 3-9	15		
India:				
Bombay	Nov. 19-Dec. 2	19	8	
Indo-China:				
Saigon	Nov. 13-19	2		
Italy:				
Genoa	Dec. 1-15	6	1	
Leghorn	Dec. 16	5	1	
Naples	Dec. 3-9	8		
Palermo	Nov. 26-Dec. 9	579	219	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 5, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Java:				
Batavia	do		1	
Mexico:				
Chihuahua	Nov. 20-Dec. 26	30	6	
Juarez	Dec. 19-23	1		
Magdalena	Dec. 23	45	13	
Mazatlan	Dec. 11-26		3	
Monterey	Dec. 11-24		2	
Porfirio	Dec. 3-9	3	3	
San Duval	Dec. 16			Present.
Tampico	Dec. 1-20	4	4	
Tapachula	Nov. 1-22		13	
Russia:				
Moscow	Nov. 19-25	5		
Odessa	Nov. 26-Dec. 2	2	1	
St. Petersburg	Nov. 19-25	10	1	
Spain:				
Valencia	Dec. 3-9	6	1	
Teneriffe:				
Santa Cruz	do		6	
Turkey in Asia:				
Beirut	do	8	3	
Turkey in Europe:				
Constantinople	Dec. 4-17		12	
Zanzibar:				
Zanzibar	Oct. 28-Nov. 17	1	1	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Dec. 9	163,084	60								1	1	1	
Aguascalientes	Dec. 24	40,000	48					1	4					
Aix-la-Chapelle	Dec. 2	156,437	45	4									3	
Amoy	Nov. 25	200,000								1				
Amsterdam	Dec. 16	579,705	135	15									1	2
Antwerp	Dec. 9	327,668	72	6							1			
Batavia	Nov. 25	217,630	10			2		1				1		
Beirut	Dec. 16	80,000	18	2				3		5				
Belfast	..do	385,492	152	28							2	1	3	
Belgrade	Dec. 9	90,050	37								2	2		
Do	Dec. 16		37							1				
Berlin	Dec. 9	2,082,228	559	70						1	9	23	4	2
Bristol	Dec. 23	357,509	94	9						1			1	
Budapest	Nov. 26	1,000,000								4	3	4	4	
Do	Dec. 2									5	1	1	10	
Cairo	Nov. 25	689,439	387	27					3	3		15		
Do	Dec. 2		393	27					1	5	1	10	1	
Catania	Dec. 22	207,000	61	2					2		2			
Chemnitz	Dec. 9	298,000	87	10							1	1	2	
Christiania	Dec. 16	245,000	59	5								4	4	
Cologne	Dec. 9	522,694	134	10							1	1	2	1
Colombo	Nov. 25	213,974	151	17						6				
Constantinople	Dec. 24	1,000,000	243	28				4		5		1	3	
Dresden	Dec. 9	555,500	115	11								1		1
Dublin	Dec. 16	403,732	180	21						3	1	4	5	3
Do	Dec. 23		168	25							3	5	4	5

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Edinburgh	Dec. 16	320,829	93	5										
Erfurt	Dec. 2	125,430	30	2							1	7		
Ghent	Dec. 16	165,965	42	3								1		
Gibraltar	Dec. 17	25,367	7										2	
Glasgow	Dec. 22	784,655	276							1	1	4	15	
Gothenburg	Dec. 16	168,000	37	6						1				
Hamburg	do	931,035	273	33						1	3	12		
Hongkong	Nov. 25	336,488						4						
Hull	Dec. 16	278,968	81							1				
Kharput	Dec. 9	21,000	14			13			1					
Do	Nov. 25		9			9								
Konigsberg	Dec. 9	247,300	105	7							1	3	1	
Leipzig	do	595,703	145	22							1	1		
Leith	Dec. 16	80,674	28	4									1	
Libau	Dec. 17	90,000								1	9	1		
Liverpool	Dec. 16	747,627	316	21						1	3	3	3	
London	Dec. 9	7,269,752	1,814							3	4	20	9	
Do	Dec. 16		2,007							8	6	31	15	
Lubeck	do	100,000	38	2									2	
Lyon	Dec. 9	523,796	167	28								3	1	
Magdeburg	Nov. 25	284,296	85	3							2	3		
Do	Dec. 2		110	6							2	6		
Manchester	do	631,533	241	20							3	4	4	
Do	Dec. 9		211	19								1		
Do	Dec. 16		245	28						1		2	3	
Mannheim	Nov. 25	198,000	51	8							2			
Do	Dec. 2		41	7						1	1	2		
Mazatlan	Dec. 19	22,000	20	2				1						
Do	Dec. 26		23					2						
Mersine	Dec. 7	20,000	6	1		1								
Mexico	Dec. 2	719,052	392					1	9		2	2	2	
Do	Dec. 9		402					1	1					
Moncton	Dec. 23	11,329	3									1		
Monterey	Dec. 17	100,000	57	4				1						
Do	Dec. 24		64	3				1		1				
Montreal	Dec. 23	466,197	135	21						3		3	2	
Do	Dec. 30		145	17						5	1	4		
Moscow	Nov. 18	1,500,000	634	64						6	11	10	22	
Do	Nov. 25		663	89					1	5	14	16	20	
Do	Dec. 2		715	90				1	1	5	9	12	31	
Do	Dec. 9		706	78				1		2	16	14	33	
Munich	do	597,000	161	13							1	1		
Nagasaki	Dec. 3	178,074	38	7						1				
Nagoya	Nov. 25	418,627	111							4		1		
Nottingham	Dec. 2	259,942	76										7	
Do	Dec. 9		97								1	1	4	
Nuevo Laredo	Dec. 30	9,000	7							1				
Odessa	Nov. 25	546,000	173	29						3	3	5	3	
Do	Dec. 2		159	18				1	1	1	2		1	
Do	Dec. 9		194	27						2	3	4	3	
Do	Dec. 16		170	30						2	4	7	4	
Ottawa	Dec. 16	90,000	28	2								1		
Do	Dec. 23		21									2		
Palermo	Dec. 2	340,000	266	8				129		1	1			
Do	Dec. 9		228	10				90		2	1			
Do	Dec. 16		235	7				103						
Para	do	185,000	61	9			1							
Paris	Dec. 9	2,846,986	847	192						4	2		10	
Patras	Dec. 17	40,000	10	1							1			
Porfirio	Dec. 9	16,000	10	1				3						
Port Elizabeth	Dec. 2	30,692	24	4						1				
Port Said	Nov. 25	52,811	18	2								1		
Do	Dec. 2		23	1								1		
Prague	Nov. 25	225,204	73	18							1			
Do	Dec. 2		62	12						2	1	2	2	
Do	Dec. 9		90	15						1	3	1		
Progreso	Dec. 16	6,959	9	2									1	
Rio de Janeiro	Nov. 18	912,169	310	63	6					1		1	4	
Do	Nov. 25		309	68						1		1	4	

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Rio de Janeiro	Dec. 2		363	85	1					2		1	3	5
Do	Dec. 9		103	92						1		1	1	4
Rotterdam	do	434,405	81							1	1	3		
St. Petersburg	Nov. 25	1,907,708	625	115				1		21	7	5	24	11
Do	Dec. 2		662	113				3	1	20	17	7	19	5
Do	Dec. 9		670	124				1		12	15	12	38	10
Salina Cruz	Dec. 17	6,138	4							1			1	
Santa Cruz de Teneriffe	Dec. 9	46,000	14					6						
Do	Dec. 16		21	1				4	3			1		
Santiago de Cuba	do	53,614	23	1						1				
Do	Dec. 23		29	2						2				
Sarnia	do	99,936	4							2				
Do	Dec. 30		9							3				
Shanghai	Nov. 19	492,000	112	14										
Do	Nov. 26		112	14							1	1		
Do	Dec. 3		117	19							7	1		
Singapore	Nov. 11	303,828	231	29	1	3				2				
Do	Nov. 18		208	26	1					3				
Southampton	Dec. 16	119,394	29	3								1		
Do	Dec. 23		39	3								1		
Stettin	Dec. 2	239.000	71	1							1	2		
Do	Dec. 9		91	5								2		
Stockholm	Dec. 2	343,832	76	14							1	1		1
Do	Dec. 9		92	16								1	1	
Swansea	Dec. 16	115.100	40									2		2
Stoke on Trent	do	235,049	79	3								1	1	
Do	Dec. 23		101	6									3	2
Talcahuano	Dec. 2	28,000		3				1					1	2
Do	Dec. 9			2				1					1	1
Tampico	Dec. 10	23,452	54	9				1						
Do	Dec. 20		42	8				3					1	
Tapachula	Nov. 7	25,000	44	1				1						
Do	Nov. 15		37	4				1						1
Do	Nov. 22		32	1				11						
Do	Nov. 30		36						1			1		3
Toronto	Dec. 23	392.000	96	6							2	2		
Trinidad	Dec. 2	60.000	27	4						1				
Do	Dec. 9		26	2						1				
Turin	Nov. 5	401.556	120	16						2				1
Do	Nov. 12		115	14						3		1		
Do	Nov. 19		130	12						1		1		
Do	Nov. 26		124	6								1		
Do	Dec. 3		115	9						2		1		
Valencia	Dec. 9	240.000	109	11				1		1		1		
Do	Dec. 16		104	6				1		2	2	2		
Vancouver	Dec. 9	100.333	19							1		1		
Do	Dec. 16		20							1		1		
Venice	Aug. 19–Nov. 25	184.325	814	106		1				3	1	5	1	8
Vienna	Dec. 2	2,064.583	568	74						3	2	4	5	3
Yokohama	Dec. 11	419.630								2				

MORTALITY—FOREIGN AND INSULAR COUNTRIES AND CITIES (Untabulated).

ALGERIA — *Algiers.*—Month of November, 1911. Population, 172,397. Total number of deaths from all causes 322, including diphtheria 1, smallpox 1, tuberculosis 39, typhoid fever 20.

BRAZIL—*Pernambuco.*—Two weeks ended October 31, 1911. Population, 225,000. Total number of deaths from all causes 421, including measles 1, plague 2, smallpox 90, tuberculosis 55, typhoid fever 1.

Two weeks ended November 15, 1911. Total number of deaths from all causes 435, including measles 1, plague 1, smallpox 89, tuberculosis 51, typhoid fever 2.

FORMOSA.—Three weeks ended November 25, 1911. Population, 3,290,186. Total number of deaths from all causes not reported. The deaths include diphtheria 1, typhoid fever 16.

FRANCE—*Marseille.*—Month of November, 1911. Population, 550,619. Total number of deaths from all causes 704, including diphtheria 5, smallpox 1, tuberculosis 102, typhoid fever 13.

Roubaix.—Month of November, 1911. Population, 122,154. Total number of deaths from all causes 132, including scarlet fever 1, tuberculosis 20, typhoid fever 1.

GREAT BRITAIN.—Week ended December 9, 1911.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 15.2 per 1,000 of the population, which is estimated at 16,157,797.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 17.7 per 1,000 of the population, which estimated at 1,149,495. The lowest rate was recorded at Sligo, viz, 4.7, and the highest at Cork, viz, 26.5 per 1,000.

Scotland.—The deaths registered in 8 principal towns correspond to an annual rate of 16.8 per 1,000 of the population, which is estimated at 1,710,291. The lowest rate was recorded at Edinburgh, viz, 14.1, and the highest at Greenock, viz, 24.3 per 1,000. The total number of deaths from all causes was 550, including diphtheria 8, measles 23, scarlet fever 3, typhoid fever 5.

ITALY—*Genoa.*—Two weeks ended December 15, 1911. Population, 272,077. Total number of deaths from all causes 110, including diphtheria 4, smallpox 1, tuberculosis 26.

Florence.—Month of October, 1911. Population, 232,860. Total number of deaths from all causes 351, including diphtheria 4, tuberculosis 48, typhoid fever 15.

JAMAICA—*Kingston.*—Month of November, 1911. Population, 50,000. Total number of deaths from all causes 106, including tuberculosis 10, typhoid fever 9.

Malta.—Three weeks ended December 9, 1911. Population, 213,395. Total number of deaths from all casues 338, including measles 1, tuberculosis 8, typhoid fever 11.

New Zealand.—Month of September, 1911.

Auckland.—Estimated population, 102,676. Total number of deaths 81, including tuberculosis 6.

Christchurch.—Estimated population, 80,193. Total number of deaths 47, including tuberculosis 4.

Dunedin.—Estimated population, 64,237. Total number of deaths 59, including diphtheria 1, scarlet fever 1, tuberculosis 5.

Wellington.—Estimated population, 70,729. Total number of deaths 75, including diphtheria 1, tuberculosis 9.

By authority of the Secretary of the Treasury:

A. H. Glennan,
Acting Surgeon General.
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

VOL. XXVII. JANUARY 19, 1912. No. 3.

THE CULTIVATION OF AN ACID-FAST BACILLUS FROM A RAT SUFFERING WITH RAT LEPROSY (A PRELIMINARY REPORT).

By Harry T. Hollmann, Acting Assistant Surgeon, Public Health and Marine-Hospital Service.]

Since the cultivation of the *Bacillus lepra* in symbiosis with amœbas and the cholera vibrio,[1] I have attempted to cultivate by the same method the acid-fast bacillus found in the lesions of rats suffering with rat leprosy.

The amœbas used in these experiments were isolated from the intestines of a guinea pig and grown in symbiosis with cholera vibrio.

The method of isolating and growing in "pure mixed" culture was that of Musgrave and Clegg.[2]

Five-day old cultures of this "pure mixed" culture of amœbas and cholera vibrios were inoculated with blood taken from the heart of a rat. This rat was the descendant of 1 of 12 rats inoculated with rat leprosy by Passed Asst. Surg. McCoy in 1909. It was allowed to live in continuous contact with these inoculated rats and subsequently developed the disease. It showed advanced lesions of the disease known as rat leprosy. Smears from the lesions, as well as from the heart blood, showed numerous acid-fast bacilli.

The inoculated tubes were placed in the incubator at 37° C. and allowed to remain at this temperature for six days. Smear preparations from the inoculated tubes made at the end of this period showed many changes in the morphology of the acid-fast bacilli. The bacilli became longer, with the beads well marked, while a budding or branching process was also observed. The bacilli then became much smaller than those observed in the tissues of rats suffering with rat leprosy, in some cases being almost of a coccoid form. The number of bacilli present showed an increase over the number originally found in the rats' heart blood.

Transplants were then made to tubes of cholera vibrio with amœbas 5 days old, and placed at the same temperature, examinations of smears made at periods of from 6 to 13 days showed on a number of the sides evidences of multiplication of the microorganism. With the succeeding subcultures in 5-day old cholera vibrio with amœba tubes, the acid-fast bacilli increased proportionally in numbers.

In the ninth generation attempts were made to separate and to grow the acid-fast bacilli in pure culture. This was done by heating the mixed cultures of amœbas, cholera vibrios, and the acid-fast bacilli for 30 minutes at a temperature of 62° C. This temperature was sufficient to kill the cholera vibrios and the amœbas.

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[1] Clegg, M. T., 1909. The Cultivation of the Leprosy Bacillus. Philippine Journal of Science, sec. B., 1909, vol. 4, No. 77, p. 403.

Currie, D. H., Brinckerhoff, W. R., and Hollmann, H. T., 1910. On the Cultivation of the Bacillus of Leprosy by the Method of Clegg. Public Health Reports, United States Public Health and Marine-Hospital Service, Aug. 26, 1910.

[2] Musgrave, W. E., and Clegg, M. T., Amebas: Their Cultivation and Etiological Significance. Pub. P. I. Bur. Sci. Biolog. Lab. (1904).

Cultures were then made from the heated mixture on glycerin agar in tubes and incubated as before.

After a period of 21 days distinct colonies were observed on the media. These colonies were raised, had smooth irregular borders, and were pale yellow in color.

Stained preparations made from these colonies showed an acid-fast bacillus. Subcultures grew well on glycerin agar with a smooth raised, creamy-appearing growth of a lemon-yellow color, which was found to be easily removed from the media with the oese. On plain and nutrient agar, the growth was of a lighter lemon-yellow color, but not so profuse a growth as on glycerin agar.

ANIMAL INOCULATIONS.

Eight white rats were inoculated subcutaneously with a suspension in saline solution of the third generation of pure culture, each rat receiving an amount of the suspension equivalent to five oesen of the pure culture. One of these rats died on the thirty-seventh day after the inoculation. The autopsy revealed an inflammatory reaction around the site of the inoculation, in which acid-fast bacilli were found.

Another died on the forty-eighth day. The autopsy revealed an abscess at the site of inoculation, and minute areas of consolidation in the lungs. Smears made from the contents of the abscess contained acid-fast bacilli.

The remaining six rats were chloroformed on the one hundred and sixteenth day. The autopsies of these six rats revealed ulcerations at the site of the inoculations in which acid-fast bacilli were found.

In two there was consolidation of the lungs. Smears made from one of these consolidated lungs contained acid-fast bacilli. In one rat smears from a nasal lesion contained acid-fast bacilli.

Three white rats were inoculated intraperitoneally with the same amount of this suspension. They were chloroformed on the one hundred and sixteenth day. The autopsies revealed no apparent pathological change, but smears made from the spleens of two of these rats showed acid-fast bacilli.

Two guinea pigs were inoculated with the same amount of the suspension, one subcutaneously, the other intraperitoneally. They were chloroformed on the one hundred and ninety-seventh day. The autopsies revealed no pathological changes, nor were acid-fast bacilli found.

SUMMARY.

I have succeeded in cultivating in pure culture an acid-fast bacillus from a rat suffering with rat leprosy by the method described by Clegg in the cultivation of the human lepra bacillus.

Of the eight rats inoculated with the pure culture subcutaneously acid-fast bacilli were found in all, in the lesions of the skin of eight, in the lungs of two, and in the nasal discharge of one.

Of the three rats inoculated intraperitoneally no lesions of the skin nor of the internal organs were found, but the splenic pulp in two of them contained acid-fast bacilli.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since Jan. 1, 1910.]

AMSTERDAM, N. Y.

MILK—PRODUCTION, CARE, AND SALE.

SECTION 1.—*License.*—No person, corporation, firm, or association shall sell or exchange, or offer or expose for sale or exchange, or peddle, or deliver any milk or cream within the city of Amsterdam without a permit in writing from the board of health.

SEC. 2.—*Application for license.*—All applications for licenses shall be in writing on blanks furnished by the board of health, and the applicant shall therein furnish all such information and data as may be required by said board of health to properly protect the public health of the city. The application shall be deemed the basis on which the license is granted, and any statement contained therein which is not true shall nullify the license. All applications must be approved by the board of health before a license is granted thereon.

SEC. 3. *Inspection of dairies on application for license.*—No application for a license shall be approved and no license shall be granted on such application until the board of health of the city of Amsterdam satisfies itself by examination and inspection of the respective dairies that the product thereof is not detrimental to the public health of the city. A minimum standard shall be adopted by the board of health, and may be changed from time to time, and the failure of any dairy to conform to that standard at any time shall be good cause for the revocation of the license issued to sell the product or any part of the products of such dairy. The result of all examinations and inspections of dairies made by the board of health shall be in writing and preserved. (The minimum standard required before an application for a license shall be approved and a license granted thereon shall be score of 40 points on the scale adopted by the United States Department of Agriculture, Dairy Division.)

SEC. 4. *Licenses.*—Licenses shall be granted for one year only from June 1 to June 1, by the board of health without fee or expense, but subject to such conditions as the said board of health may deem necessary for the preservation of the public health within the city of Amsterdam, and shall be subject at all times to revocation by the said board in its discretion. No license shall be granted or renewed save on written application of the applicant. The refusal of the owner or person in charge of any dairy at any time to allow a full and free examination and inspection of such dairy and the milk and cream produced thereat and its handling and treatment and the taking of samples thereof by the board of health or its agents shall be good cause for the revocation of the license or licenses issued to any person or persons, firm, corporation, or association to sell the product or any part of the product of such dairy.

SEC. 5. *License numbers to be exposed.*—No person, persons, firm, corporation, or association shall sell or exchange, or offer or expose for sale or exchange, or peddle or distribute within the city of Amsterdam, milk or cream from any vehicle unless said vehicle shall have plainly exposed on both sides thereof in gothic letters at least 2 inches in height the license number in the following words: "Health department license ——," and no person, persons, firm, corporation, or association shall sell or exchange or offer or expose for sale or exchange any milk or cream in any building or structure within the city of Amsterdam unless there is exposed in a conspicuous place in said building or structure a sign in black gothic letters not less than 2 inches in height upon a white background the license number in the following words: "Health department license ——."

SEC. 6. *Milk.*—Any person, persons, firm, corporation, or association to whom a license has been granted for the sale of milk or cream, their agents or employees, shall at all times and places, on demand, furnish the board of health or its agents, and permit the said board of health and its agents to take from the milk or cream in its, his, or their possession or under their control, such samples as the said board of health may deem necessary for tests and analysis. Every sample of milk or cream taken by said board of health shall have a label attached to the vessel containing such sample, and the agent of the board of health, at the time of taking said sample, shall write thereon the number of the license, the number of the sample, the date of collection, and the name of the agent of the board of health taking said sample, who shall thereupon make a memorandum of the name of the owner and driver or clerk from whom collected, and a duplicate of the sample sealed in a bottle or vessel shall be delivered to the person from whom the sample is taken. Each sample shall be analyzed separately, and the license number, the sample number, the date of collection, the name of the person collecting the sample, the percentage of total solids, butter fats, and watery fluids, and such other data relative to the purity of the milk as the board may determine upon, shall be entered in a book permanently kept for that purpose, and the name of the owner shall be subsequently inserted. The records of said tests and analysis shall be open for public inspection. The result of the test and analysis in writing shall as soon as possible be delivered to the owner or dealer, and should the result show that the quality of milk or cream is below the standard adopted by the board of health it will constitute good cause for a revocation of the license.

Sec. 7. No person, persons, firm, corporation, or association shall—

(1) Sell or exchange, or offer or expose for sale or exchange or peddle or distribute within the city of Amsterdam, any unclean, impure, unhealthy, adulterated, or unwholesome milk or cream, or any article of food made therefrom. The term "adulterated milk" shall be construed to cover milk containing more than 88 per cent of water or fluids, or less than 12 per cent of milk solids, or less than 3 per cent of fats, or drawn from animals within 15 days before or 5 days after parturition, or drawn from cows kept in a crowded or unhealthy condition, or milk which has been diluted with water or any other fluid, or to which has been added or into which has been introduced any foreign substance whatever, or containing bacteria of any kind more than 500,000 per cubic centimeter, Bodinal count, or drawn from any animal suffering from a contagious or communicable disease, or produced at a dairy where any person engaged in handling or caring for the animals or milk is suffering from a contagious or communicable disease, or milk having a temperature of more than 50° F. at the time of delivery.

(2) Sell or exchange or offer or expose for sale or exchange, or peddle or distribute any milk from which the cream or any part of such cream has been removed, unless in a conspicuous place, above the center and on the outside of every vessel in which said milk is sold or kept the words "skimmed milk" are distinctly marked in gothic letters at least 1 inch high.

(3) Sell, exchange, or offer or expose for sale or exchange, or peddle or distribute any milk or cream in any vessel, unless said vessel has been thoroughly washed and cleaned before being last filled, and has not been placed or kept near any decaying vegetable or animal matter or so exposed as to render its contents unhealthful.

(4) Shall place or keep any milk or cream which is thereafter to be sold or exchanged or offered or exposed for sale or exchange or peddled or distributed, in any barn or stable, or any living room or sleeping room, or any other place where the said milk or cream is liable to contamination.

(5) Use milk tickets, save slip tickets, the same to be used only once.

(6) Shall refill any receptacle without being first washed, furnish any receptacle for the delivery of milk to a family or apartment in the city of Amsterdam where there is a contagious disease during the period of quarantine.

Penalties.—Any person violating any of the provisions of the foregoing ordinance shall forfeit and pay a penalty of $50 for the first offense and for the second offense shall pay a penalty of $100 and upon conviction of a second offense the license must be revoked. Such penalty or penalties shall be recoverable with costs in an action brought by the board of health in any court of competent jurisdiction and upon collection shall be paid in to the treasurer of the city of Amsterdam to be applied to such purposes as the common council of said city may direct. [Ordinance adopted by board of health, Apr. 12, 1911.]

NEWBURYPORT, MASS.

MILK—PRODUCTION, CARE, AND SALE.

Section 1. All persons in the city of Newburyport engaged in the production of milk for sale, or in the conveyance in carriages for the purpose of selling, delivering, or distributing milk in said city, shall, annually, on the 1st day of May, or within 30 days thereafter, make written application to the inspector of milk, on forms prescribed by the board of health, for a license. All persons in the city of Newburyport, before selling milk, shall make written application to the inspector of milk on forms prescribed by the board of health for a license.

Sec. 2. No person in the city shall engage in the business of producing milk for sale, or in the sale or distribution of milk in the city of Newburyport, without a license so to do under this regulation and such other conditions as the board of health may impose; said license to be revoked if the licensee fails to comply with the conditions of his license and the regulations of this board.

Sec. 3. The conditions under which every cow is kept whose milk is brought into the city of Newburyport, or kept, delivered, distributed, sold, or offered for sale in said city, shall be made known by the licensee to the board of health if said board shall deem it necessary, and in such detail as the board of health may require, and shall be approved by said board: and no milk except that delivered from such cow shall be brought, kept, delivered, distributed, sold, or offered for sale in said city.

Sec. 4. No milk shall be sold, offered for sale, or distributed in the city of Newburyport which was drawn from cows within 15 days before or five days after parturition, nor unless the cows from which it was derived have, within one year, been examined by a competent authority and shown to be free from diseases dangerous to the public health.

Sec. 5. Every person having a license to sell, deliver, or distribute milk in the city of Newburyport shall keep a copy of the same constantly posted in a conspicuous place on his premises, and shall have his name, the number of his license, and his place of business marked in plain, uncondensed gothic letters not less than 1 inch in height on all vehicles used by him in the conveyance and sale of milk.

Sec. 6. No milk kept for sale or distribution shall be stored in any portion of a building which is used for stabling of horses, cows, or other animals, or for the storing of manure, or in any room used in whole or in part for domestic or sleeping purposes, unless the storage room for milk is separated from the other parts of the building to the satisfaction of the board of health.

Sec. 7. No person engaged in the business of producing milk for sale or in the business of storing, selling, or delivering milk in said city, shall store, cool, strain, or mix said milk in any room which is occupied by horses, cows, or other animals. All rooms in which milk is stored, cooled, or mixed shall be provided with tight walls and floor and kept constantly clean. The walls and floors of said room shall be of such construction as to allow easy and thorough cleansing. The room or rooms aforesaid shall contain proper appliances for washing or sterilizing all utensils actually employed in the storage, mixing, cooling, sale, or distribution of milk, and all such apparatus and utensils shall be washed with boiling water or sterilized by steam regularly after being used.

Sec. 8. No urinal, water-closet, or privy shall be located in the rooms called for in the preceding section, or so situated as to pollute the atmosphere of said rooms.

Sec. 9. All milk produced for the purpose of sale shall be strained, cooled, or stored as soon as it is drawn from the cow.

Sec. 10. Milk kept for sale in any store, restaurant, market, bakery, or other establishment shall be stored in a covered cooler, box, or refrigerator. No vessel containing milk for sale shall be allowed to stand outside the cooler, box, or refrigerator, except while sale of said milk is being made. Every such cooler, box, or refrigerator shall be properly drained and cared for, and be kept tightly closed, except during such intervals as are necessary for the introduction or removal of milk or ice, and they shall be kept only in such locations and under such conditions as shall be approved by the board of health.

Sec. 11. All cans, bottles, or other vessels of any sort used in the sale, delivery, or distribution of milk shall be cleansed or sterilized before they are again used for the same purpose, and all wagons or vehicles used in the conveyance of milk for sale or distribution shall be kept in a cleanly condition and free from offensive odors. No person shall use a milk vessel or container for any other substance than milk.

Sec. 12. Every person engaged in the production, storage, transportation, sale, delivery, or distribution of milk, immediately on the occurrence of any case or cases of infectious disease, either in himself or in his family, or among his employees or their immediate associates, or within the building or premises where milk is stored, sold, or distributed, shall notify the Newburyport Board of Health, and at the same time shall suspend the sale and distribution of milk until authorized to resume the same by the said board of health. No vessels which have been handled by persons suffering from such disease shall be used to hold or convey milk until they have been thoroughly sterilized.

Sec. 13. No person by himself or by his servant or agent or as the servant or agent of any other person, firm, or corporation, shall, in the city of Newburyport, sell, exchange, or deliver any milk, skimmed milk, or cream which contains more than 200,000 bacteria per cubic centimeter, or which has a temperature higher than 50° F., or milk containing pus cells, or more than 2 per cent acidity, or that reacts to the usual tests from formalin, salicylic acid, or boric acid.

SEC. 14. All barns or other buildings where cows are kept, the milk from which cows is intended for sale in the city of Newburyport, in whole or in part, shall at all times be kept in a cleanly and sanitary condition and shall be properly lighted and ventilated and the walls shall be kept well painted or whitewashed. No accumulation of manure shall be allowed but shall be removed at least twice daily, and one hour before milking. All cows shall be thoroughly brushed at least once daily or before milking and the udder carefully wiped with damp cloths before milking.

SEC. 15. The milk inspector or any other person or persons designated by the board of health may at pleasure inspect any cow barn and rooms for storing, cooling, mixing, or handling milk intended for sale in the city of Newburyport and may inquire into and ascertain the methods of caring for the cows, milking, storing, and handling the milk; and if said inspector or other person finds that this or any other regulation of the Newburyport Board of Health is not being observed he may order the sale in the city of Newburyport of milk from such premises stopped until said regulations are complied with. And if the privilege of inspecting any such premises is refused, or any proper information is withheld from said inspector or other person, he shall immediately order the sale of milk or cream from such premises in the city of Newburyport stopped.

SEC. 16. No person or corporation shall sell, or offer, expose, or keep for sale in any shop, store, or other place where goods and merchandise are sold, milk or cream unless the same is sold or offered, exposed, or kept for sale in tightly closed or capped bottles or receptacles which have been approved by the board of health. Nothing contained herein shall prevent the sale of milk or cream from cans, crocks, coolers, or other receptacles, in restaurants, hotels, or boarding houses when the milk or cream is to be consumed in the premises by guests or patrons ordering the same.

SEC. 17. Every person or corporation engaged in the business of selling milk or cream shall, immediately upon receiving a written order from the board of health so to do, comply with any requirement of said board respecting the filling of milk or cream in bottles or receptacles, the manner and methods employed in such filling, or the conditions and surroundings under which such filling is done or carried on.

SEC. 18. No person or corporation shall sell, or offer, expose, or keep for sale at retail, milk or cream in the room or store where the same is put into bottles or receptacles.

SEC. 19. No person or corporation shall mix for the purpose of sale two or more of the following substances: Whole milk, skimmed milk, condensed milk, concentrated milk, or evaporated milk and water.

No person or corporation shall sell, or offer, expose, or keep for sale, deliver or have possession or custody of with intent to sell, mixtures of any of the substances named above.

SEC. 20. No person or corporation engaged in the sale of milk or cream other than condensed, concentrated, or other evaporated milk, shall keep in his place of business condensed, concentrated, or other evaporated milk, except in unopened cans or receptacles.

Nothing contained herein shall prevent the preparation and sale of "modified milk," when sold as such, to be used as food by infants and invalids.

This regulation shall take effect as soon as published. [Regulation board of health, adopted Apr. 25, 1910.]

NEW ORLEANS, LA.

POLIOMYELITIS—NOTIFICATION.

Resolved, That from and after this date poliomyelitis be included in the list of communicable diseases to be reported to the Board of Health of the City of New Orleans, under the provisions of section 27 of ordinance 6022, A. S., as amended by ordinance 3029, C. S., and 532, N. C. S., and by resolutions of the Board of Health of the City of New Orleans, dated August 12, 1901, and May 14, 1907, and April 13, 1909. [Resolution, board of health, adopted Mar. 14, 1911.]

PITTSBURGH, PA.

PREMISES—CARE OF.

SECTION 1. When any lot or excavation in the city of Pittsburgh shall from any cause whatsoever become the repository of stagnant water, or of any decaying or offensive substances, liquid or solid, it shall be the duty of the owner or occupant of said premises within a specified time given in a written notice from the department of public health, to cause such lot or excavation to be drained or to be filled with clean earth or other inoffensive substance.

Sec. 2. Any person or persons who shall fail, neglect, or refuse to comply with or who shall violate any of the provisions of this ordinance, shall, upon conviction thereof in a summary proceeding before any police magistrate or alderman in the city of Pittsburgh, be sentenced to pay a fine of not more than $50 and in default of payment thereof to be imprisoned in the county jail for a period of not more than thirty days. [Ordinance adopted Mar. 27, 1911.]

READING, PA.

HEALTH COMMISSIONER—DUTIES OF.

Rule 34. It shall be the duty of the health commissioner, with his assistant or assistants, to execute the rules and regulations of this board, and such directions as he shall from time to time receive from the president. He shall hear and investigate all complaints that may be made of a violation of these rules and regulations by any of our citizens, or of any nuisance, source of filth, or anything whatsoever that may impair the sanitary condition of this city, and if not explicitly provided for in the rules and regulations, refer them to the board for instructions. He shall from time to time make a visit of inspection through the several streets, lanes, and alleys of the city to manufactories, hospitals, slaughterhouses, stables for cows or horses, cellars, oyster saloons or restaurants, fish markets or stands, and green grocers, and shall also, upon complaint being made in writing, visit private alleys and residences, with a view of ascertaining whether any nuisance or source of filth or disease exists thereon. [Regulation, board of health, adopted May 15, 1911.]

PENALTY FOR VIOLATION OF REGULATIONS OF BOARD OF HEALTH.

Rule 35. Every person who shall willfully or knowingly obstruct or resist the said board of health, or any of the members thereof, or the said health commissioner, or any person by the said board of health appointed, in the execution of the powers to them given, or in the performance of the duties enjoined upon them by this act, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be subject to pay a fine not exceeding $1,000 and imprisonment not exceeding one year, or both, or either, at the discretion of the court.

Rule 36. Any person, persons, body or bodies corporate, who shall violate, or refuse or neglect to obey any of the foregoing rules other than those for which the penalty has already been provided, shall forfeit a penalty of not less than $10 nor more than $100, to be recovered as provided in section 13 of the act of the general assembly of April 22, 1873, establishing the board of health in the city of Reading. (P. L. 831.)

Rule 37. All rules and regulations previously adopted by this board and inconsistent herewith are hereby repealed. [Regulations, board of health, adopted May 15, 1911.]

ST. LOUIS, MO.

COMMON DRINKING CUP PROHIBITED—DISHES AND UTENSILS USED FOR EATING OR DRINKING TO BE CLEANSED.

Section 1. No drinking vessel used in common, or to be used in common, shall be exposed, kept, provided, or permitted in any railroad station, public or private school, public playground, public park, public building, or in any part of any other building or premises to which part the public is admitted.

Sec. 2. Any and every glass, cup, dish, and other eating or drinking vessel or utensil used in or at any hotel, saloon, restaurant, drug store, soda fountain, or other place of public refreshment in the city shall be thoroughly cleansed in running water or in clean water after each and every use thereof by any patron, and prior to any further use thereof in eating or drinking by any other patron; and no such glass, cup, dish, or other eating or drinking vessel or utensil, after use by one patron in eating or drinking, shall be offered or permitted to be used by any other patron without such glass, cup, dish, or other eating or drinking vessel or utensil having been first thoroughly cleansed in running water or in clean water.

Sec. 3. Any person, firm, or corporation in charge or control or possession of any such building, premises, place, or place of business herein provided for whereat any provision of this ordinance shall be violated shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined not less than $5 nor more than $25 for each and every offense. [Ordinance adopted Mar. 27, 1911.]

SAN FRANCISCO, CAL.

INSTITUTIONS AND PUBLIC BUILDINGS—CUBIC AIR SPACE.

SECTION 1. Ordinance No. 1008 (new series), known as "the building law," is hereby amended by adding a new section thereto, to be numbered section 189*a*, to read as follows:

SEC. 189*a*. In all buildings which are designated to be used in whole or in part as public buildings, public or private institutions, schoolhouses, churches, public places of assemblage, or places of public resort, and all buildings which are designed to be used in whole or in part as factory, workshop, mercantile, or other establishment, and with accommodations for 10 or more employees, provision shall be made for at least 15 square feet of floor space and 200 cubic feet of air space for each occupant to be accommodated in each room therein, and for supplying at least 30 cubic feet of pure air per minute for each occupant thereof.

In every building or part of building, intended for audience room only, as a theater, hall, or nickelodeon, provision shall be made for supplying at least 30 cubic feet of pure air per minute for each occupant thereof. [Ordinance adopted May 22, 1911.]

SPRINGFIELD, ILL.

SAMPLES OF MEDICINE—DISTRIBUTION OF.

SECTION 1. No person shall be permitted to give away or deposit or otherwise distribute any sample packages, parcels, boxes, or other quantity of any nostrum, pills, proprietary medicine or any other material of an alleged medical character or purporting to be a curative agency by means of depositing or leaving same in any street, alley, for public or private property in the city. Any person violating any of the provisions of this section shall, upon conviction, be fined not less than $5 nor more than $100. [Ordinance adopted May 31, 1910.]

SYRACUSE, N. Y.

COMMISSIONER OF PUBLIC SAFETY—DUTIES AND POWERS.

SEC. 3. *Duties and powers of the commissioner.*—The commissioner shall be charged with the enforcement of health laws and ordinances within the city. The commissioner shall appoint a health officer, who, by the authority and under the direction of the commissioner, may appoint a deputy health officer and employ such experts in the sciences or arts relating to health and employ such other subordinates for the carrying out of these ordinances as are authorized by the commissioner and the board of estimate and apportionment. The commissioner, health officer or any duly authorized employee shall have the power to examine into complaints made by responsible persons concerning nuisance or condition dangerous to life or the public health and may enter into and examine buildings, lots, and inclosures where said nuisance or condition are known or believed to exist, and no person shall prevent or attempt to prevent such inspection or examination. The commissioner shall have authority to print blanks, forms, notices, and such matter pertaining to the public health as he may deem necessary or useful. In the presence of imminent danger, of which he shall be the judge, the health officer shall use any adequate special means necessary to protect the public health against disease until the extraordinary situation may be called to the attention of the commissioner. It shall be the duty of the commissioner to report to the corporation counsel for prosecution violation of health laws and ordinances, with a statement of the offense and the names of witnesses. The commissioner has the power to make additional changes, as the charter may authorize. [Ordinance adopted Mar. 27, 1911.]

SEWER AND WATER CONNECTIONS—COMPULSORY FOR HUMAN HABITATIONS.

SEC. 7, SUBD. D. Every structure hereafter built to be used or used for human inhabitation shall be connected with the public water service and with the public sewer when it is within access. [Ordinance adopted Mar. 27, 1911.]

LODGING HOUSES AND TENEMENTS—OVERCROWDING OF—INSTALLATION OF WATER-CLOSETS.

SEC. 7, SUBD. E. No owner, lessee, or keeper of any tenement house, lodging house, or boarding house shall cause or allow any of such houses to be overcrowded, or allow so great number of persons to dwell, be, or sleep in such house or houses or any portion thereof as thereby to cause danger to health. Whenever it shall be certified by the commissioner that any such place or room is so overcrowded that there shall be less than 500 cubic feet of air to each occupant of such building or room, with a floor space of 50 square feet, the health officer shall issue an order requiring the number of occupants of such building or room to be reduced so that the inmates thereof shall not exceed one person to each 500 cubic feet of air space or to a floor space of 50 square feet in any such building or room, and hereafter no room used as a living or sleeping room shall be built without a window open to the outdoor air.

SUBD. F. *Water closets in tenements, etc.*—All tenements, lodging houses, hotels, theaters, charitable institutions, manufactories, and other buildings frequented and used by the public shall have adequate water-closet facilities conveniently located. [Ordinance adopted Mar. 27, 1911.]

DOMESTIC ANIMALS—KEEPING OF.

SEC. 7, SUBD. H. No person shall keep or allow to be kept in the built-up portion of the city more cows than one to a city lot of 33 feet by 150 feet, or space equal thereto, and in the outlying portions of the city where premises are not subdivided into city lots or actually occupied as such, more than 15 cows to each acre of land, without a permit from the commissioner.

No person owning or occupying lands or buildings where cows, horses, dogs, or other animals are kept shall continue to keep such animals after they know them to have become infected with a contagious or pestilential disease without a permit from the commissioner, and no person owning a having the custody of any such animal shall kill or sell, or allow the same to be killed, sold, or removed from such premises without such permit. When anyone authorized by the commissioner discovers that any animal is infected with contagious or pestilential disease he may order such animal isolated. Any person owning or having the care or custody of such animal shall obey all such orders.

Wherever domestic animals or fowls are kept they shall be kept in a sanitary condition.

No person shall keep or permit to be kept any cattle in any place where the water, light, space, ventilation, and air are not sufficient for the preservation of the health of such cattle. The floor of the stable and the ground beneath it shall be well drained. Every cow shall be well bedded and kept clean. No cow shall be fed wholly on swill, slops, or undried brewer's grains. [Ordinance adopted Mar. 27, 1911.]

WELL WATER—REGULATION OF USE OF.

SEC. 7, SUBD. L. No person shall use water from wells located in the city for drinking or in the preparation of food for human beings, unless by written consent of the commissioner. [Ordinance adopted Mar. 27, 1911.]

LICENSES—MANNER OF ISSUE AND TO WHOM ISSUED.

SEC. 8. SUBD. A. *Licenses and permits.*—All licenses and permits referred to in the sanitary code and health ordinances shall be in writing and a duplicate copy thereof shall be kept in the office of the commissioner. Such licenses or permits shall be given by the commissioner, or, in case of his absence, sickness, or disability, by the health officer or by such person as the commissioner may designate.

SUBD. B. *Licenses without fee.*—No person shall carry on the business of ice dealer, plumber, or undertaker nor conduct any ambulance service for the care or transfer of sick or injured persons without registering with the commissioner and receiving a license, for which no fee shall be charged.

SUBD. C. *Licenses with fee.*—No person shall carry on the business of collector of garbage, scavenger, milk peddler, or lodging-house keeper where the charge for lodging is 25 cents or less per night without a license from the commissioner. The annual license fee for milk peddlers and scavengers, $5 for each vehicle used in the business; for lodging-house keepers, $5.

All licenses shall expire the December 31 after issue, shall not be transferred without the consent of the commissioner, and may be revoked by the commissioner for cause.

All license fees collected hereunder shall be paid to the commissioner and by him transmitted to the city treasurer.

SUBD. D. *Ice dealers, milk peddlers, garbage collectors, and scavengers.*—Every person carrying on the business of ice dealer, milk peddler, garbage collector, or scavenger (except those employed by the city) shall procure and exhibit in a conspicuous place on each vehicle so used a metal sign, issued annually by the commissioner at the time of paying the license fee, bearing the year, license number, and name of business.

Ice dealers and garbage collectors shall pay for each of such metal signs delivered to him the sum of 25 cents.

SUBD. E. *Licenses revocable.*—Any license may be revoked or canceled by the commissioner for cause or suspended until the conditions objected to are remedied. [Ordinance adopted Mar. 27, 1911.]

PENALTY FOR VIOLATION OF PROVISIONS OF SANITARY CODE AND HEALTH ORDINANCES, 1911.

SEC. 11. SUBD. A. Any person violating the provisions of these ordinances shall be guilty of a misdemeanor and be liable to a fine not exceeding $150 or to imprisonment in the penitentiary of the county of Onondaga not exceeding 150 days, or to both such fine and penalty; or to pay the city of Syracuse a penalty not exceeding $500, to be recovered in a civil action. [Ordinance adopted Mar. 27, 1911.]

WICHITA, KANS.

MEDICINES AND PROPRIETARY PREPARATIONS—DISTRIBUTION OF SAMPLES.

SECTION 1. Any person, firm, or corporation who shall, in the city of Wichita, distribute samples of medicines, foods, or other proprietary preparations by handing them to persons in the parks, streets, or other thoroughfares, or by leaving any of said samples in the yards or upon the premises of any residence or other private grounds or school buildings or grounds shall be deemed guilty of a misdemeanor, and on conviction fined in the sum of not less than $5 nor more than $100. [Ordinance adopted May 29, 1911.]

REPORTS TO THE SURGEON GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

CEREBROSPINAL MENINGITIS IN TEXAS.

Surgeon Guiteras, at Galveston, reported, January 9, that the State health officer of Texas reports the presence of cerebrospinal meningitis in the following-named cities and towns in Texas: Taylor, Waco, Austin, Dallas, Houston, Italy, Teague, Fort Worth, Smithville, Clarksville, Rockwall, and Emory. A total of approximately 300 known cases, with a mortality of 50 per cent, was recorded to January 9.

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,735 acres of land in Alameda County were covered with poison during the week ended December 30, 1911.

During the same period 3,760 acres of land in San Joaquin County and 9,450 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Dec. 30, 1911	2	[1] 112	75	....
Fresno	.....do	....	[2] 55	55	....
Oakland	.....do	10	[3] 500	399	....
San Francisco	.....do	12	[4] 1,317	987	....
Counties—					
San Joaquin	.....do	....	[5] 129	129	....
Santa Clara	.....do	....	[6] 67	67	....
Washington:					
City—					
Seattle	.....do	....	997	832	....

[1] Identified: Mus norvegicus, 79; Mus musculus, 33.
[2] Identified: Mus alexandrinus, 54; unidentified, 1.
[3] Identified: Mus norvegicus, 419; Mus musculus, 81.
[4] Identified: Mus norvegicus, 644; Mus rattus, 185; Mus musculus, 326; Mus alexandrinus, 161.
[5] Identified: Mus norvegicus, 116; Mus rattus, 3; Mus musculus, 4; Mus alexandrinus, 6.
[6] Identified: Mus norvegicus, 67.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Shot or trapped.	Found dead.	Examined.	Found infected.
California:					
County—					
Alameda	Dec. 30, 1911	....	3	....	....

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED JAN. 19, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
*Alabama:				
Montgomery	Jan. 1-5	1	....	
Colorado:				
Counties—				
Denver	Dec. 1-31	14	....	
Larimer	.....do	1	....	
Lincoln	.....do	5	....	
Rio Grande	.....do	3	....	
Total for State		23	....	
Connecticut	Dec. 1-31	....	....	No cases.
Florida:				
Counties—				
Duval	Dec. 24-30	1	....	
Hillsboro	.....do	1	....	
Lake	.....do	1	....	
Santa Rosa	.....do	1	....	
Washington	.....do	1	....	
Total or State		5	....	

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended Jan. 19, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Florida—Continued.				
Counties—Continued.				
Clay	Dec. 31-Jan. 6	5		
Dade	do	1		
Hillsboro	do	1		
Jackson	do	26		
Total for State		33		
Iowa:				
Counties—				
Adams	Dec. 1-31	1		
Appanoose	do	6		
Buchanan	do	1		
Butler	do	1		
Calhoun	do	1		
Carroll	do	2		
Cerro Gordo	do	1		
Des Moines	do	1		
Ida	do	1		
Jefferson	do	3		
Linn	do	1		
Madison	do	1		
Mitchell	do	1		
Oceola	do	1		
Pottawattamie	do	7		
Sac	do	10		
Sioux	do	4		
Woodbury	do	2		
Total for State		45		
*Louisiana:				
New Orleans	Jan. 1-6	3		
New Jersey:				
County—				
Hudson	Dec. 1-31	1		
North Dakota:				
Counties—				
Grand Forks	Dec. 1-31	1		
McHenry	do	20		
Ramsey	do	12		
Total for State		33		
Ohio:				
Counties—				
Defiance	do	21		
Hamilton	do	11		
Licking	do	1		
Marion	do	1		
Morgan	do	2		
Ottawa	do	9		
Total for State		45		
*Tennessee:				
Counties—				
Shelby	Dec. 1-31	5		
Utah:				
Counties—				
Box Elder	Nov. 1-31	1		
Carbon	do	1		
Emery	do	11		
Juab	do	27		
Salt Lake	do	7		
San Pete	do	3		
Sevier	do	56	1	
Uintah	do	93		
Utah	do	26		
Wasatch	do	6		
Weber	do	11		
Total for State		242	1	

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended Jan. 19, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Virginia:				
Counties—				
Augusta	Dec. 1-31	14		
Brunswick	do	4		
Carroll	do	8		
Lee	do	12		
Nansemond	do	21		
Norfolk	do	1		
Montgomery	do	1		
Prince William	do	2		
Southampton	do	2		
Washington	do	3		
Total for State		68		
Grand total for the United States.		504	1	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED DEC. 30, 1911.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	202	36	4	4		30	1			27	31	10	2
Boston, Mass	670,585	231	43	2	80	2	28				41	21	1	
Chicago, Ill	2,185,283	601	182	24	49	2	126	9			117	73	25	2
Cleveland, Ohio	560,663	129	34	2	40	2	40	1			19	9	4	2
New York, N. Y	4,766,883	1,441	298	36	419	7	215	8	1	1	425	149	60	9
Philadelphia, Pa	1,549,008	541	94	16	6	1	33	4	3		61	60	126	6
Pittsburg, Pa	533,905	126	45	6	10		23	1			16	8	19	1
St. Louis, Mo	687,029	218	22	2	5		13				28	20	6	
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	85	40	1	24		20				18	8	3	
Cincinnati, Ohio	364,463	121	10	1	3		19		3		25	19	2	
Detroit, Mich	465,766	152	28	3			20	2	4					
Los Angeles, Cal	310,198	118	10				12			1	7	19	4	
Milwaukee, Wis	373,857	86	19	2	25		27	1			15	11	12	
Newark, N. J	347,469	99	28	1			13				17	12	3	1
New Orleans, La	339,075	143	10				13				33	15		
San Francisco, Cal	416,912	158	7	1	94	1	17				25	18	2	1
Washington, D. C	331,069	126	15		4		3				18	10	11	3
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	74	19	2	3		7					9		1
Jersey City, N. J	267,779	84						1				9		2
Providence, R. I	224,326	47	20	3	11	1	9				4	3	3	1
Seattle, Wash	237,194	38	5		3		5				4	6	1	

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality table, cities of the United States, for week ended Dec. 30, 1911—Continued.

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	24		2			4				6	2		
Cambridge, Mass	104,839	27	13	1	6		4				4	4	1	
Columbus, Ohio	181,548	71	9	1	20		9				4	7	2	1
Dayton, Ohio	116,577	54	8		2		3					5	2	
Fall River, Mass	119,295	26	3				1				3	1		1
Grand Rapids, Mich	112,571	23	1				3				4	2	3	
Lowell, Mass	106,294	44	6		13	1	6	1			2	3	1	
Nashville, Tenn	110,364	33	4				3				1	3	1	
Oakland, Cal	150,174	25					1					5	1	1
Omaha, Nebr	124,096	30	5	2			1		1			4	1	
Spokane, Wash	104,402		2		14		3		12			1	2	
Toledo, Ohio	168,497	34	9		8		6					2	2	1
Worcester, Mass	145,986	37	2		1		7				3	3		
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	15	2				2				1	1	2	
Bayonne, N. J	55,545	15	6		5		8				1	1		
Brockton, Mass	56,878	15			9		3				8	2	2	
Camden, N. J	94,538		3	2										
Duluth, Minn	78,466	10	3				3		2		2		1	
Elizabeth, N. J	73,409	29	4		12		5				2	2	1	
Evansville, Ind	69,647	22	4		1						2	2	1	
Harrisburg, Pa	64,186	23	5								10	2		
Hartford, Conn	98,915	22	13		1		5					2		
Hoboken, N. J	70,324		3	1							1	1		
Houston, Tex	78,800	42	1	1								3		
Johnstown, Pa	55,482	18					2	1			10	2	1	
Lawrence, Mass	85,892	23	1		1		2						1	
Lynn, Mass	89,336	28	6	1	4						3	1		
Manchester, N. H	70,063	36	5		7						2	2	1	
New Bedford, Mass	96,652	30	2		4		5				4	3		
Oklahoma City, Okla	64,205	7	2				3							1
Passaic, N. J	54,773	18	3				3						2	2
Pawtucket, R. I	51,622											2		
Peoria, Ill	66,950	23.	5	1	1						2	3		
Portland, Me	58,571	19	3									2	1	
Reading, Pa	96,071	27	4				10					1	2	1
San Antonio, Tex	96,614	47			6		6					5	3	
Schenectady, N. Y	72,826	24	1				1				5		1	
South Bend, Ind	53,684	20	1										2	
Springfield, Ill	51,678	14	1	1			1		2			1		
Springfield, Mass	88,926	38	7		23		8	1			4	2		
Terre Haute, Ind	58,157		4	1			3					1	2	
Trenton, N. J	96,815	38	3	3	1		5				26	1	3	
Wilkes-Barre, Pa	67,105	26	14		182						1	1		
Wilmington, Del	87,411	35		2								1		
Yonkers, N. Y	79,803	26	2	1	4		23	1			4	2		
Cities having from 25,000 to 50,000 inhabitants.														
Auburn, N. Y	34,668	8	1	1			1				1	1		
Aurora, Ill	29,807	7	1											
Berkeley, Cal	40,434	11	2								1	4		
Binghamton, N. Y	48,443	25			1						9	2		
Brookline, Mass	27,792	2	5		1									
Butte, Mont	39,165	25	3		2		2					4		
Chattanooga, Tenn	44,604												1	
Chelsea, Mass	32,452	20					2				2	1		
Danville, Ill	27,871	11	5	1								1		2
Dubuque, Iowa	38,494	9	2									1		
East Orange, N. J	34,371	9	2	1			3				2	1		
Elmira, N. Y	37,176	17	3								1	1		
El Paso, Tex	39,279	27					3		1			10		
Everett, Mass	33,484	3	3		4		2				2			
Haverhill, Mass	44,115	12	4		5		3				1	1	1	

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality table, cities of the United States, for week ended Dec. 30, 1911—Continued.

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants—Continued.														
Kalamazoo, Mich	39,437	18	1											
Knoxville, Tenn	36,346	8	1						2			1		
La Crosse, Wis	30,417	20					1					1		
Lancaster, Pa	47,227		7				3							
Lexington, Ky	35,099	10	1		4		2					1		1
Lima, Ohio	30,508	8			2		2					1		
Lynchburg, Va	29,494	13	2		2		15				1			
Malden, Mass	44,404	12	2		3		1				2	2		
McKeesport, Pa	42,694		6	1	1								1	
Montgomery, Ala	38,136	17	5				4					1		
Mount Vernon, N. Y	30,919		1		22		1						3	
New Castle, Pa	36,280		7				2						8	
Newport, Ky	30,309	14	1				2		1		3	3		
Newton, Mass	39,806	9	1		1									
Niagara Falls, N. Y	30,445	9	1				1						17	
Norristown, Pa	27,875	8	1		9		1							
Orange, N. J	29,630	9	4		2		2							
Pasadena, Cal	30,291	12										5		
Pittsfield, Mass	32,121	9	4	1							1			
Portsmouth, Va	33,190	8	4						3					
Racine, Wis	38,002	7												2
Roanoke, Va	34,874	9	4	5							4			
San Diego, Cal	39,578	8			1	1					4	4		
South Omaha, Nebr	26,259	14	1	1										
Superior, Wis	40,384	12	4				3					1		
Taunton, Mass	34,250	11	1									4		
Waltham, Mass	27,834	9					1					2		
West Hoboken, N. J	35,403	6	4				1					1		
Williamsport, Pa	31,860	12												
York, Pa	44,750		2				1						1	
Zanesville, Ohio	28,026	11	2									1	3	1
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	7					2							
Beaver Falls, Pa	21,191		6				2						4	
Biddeford, Me	17,079	1	5								1	1	4	
Butler, Pa	20,782	9	1	1										
Cambridge, Ohio	11,327	5										1		
Camden, S. C		2												
Carbondale, Pa	17,040	3					4							
Clinton, Mass	13,075	4									1			
Coffeyville. Kans	12,687												1	
Columbus, Ga	20,554	11												
Columbus, Ind		4												
Concord, N. H	21,497	12												
Cumberland, Md	21,839	7	1										4	
Dunkirk, N. Y											1		1	
Galesburg, Ill	22,089	2							1				1	
Greensboro, N. C	15,895	2					4						2	
Harrison, N. J	14,498	4	1											
Homestead, Pa	18,713	8	2	1									1	
Hyde Park, Mass	15,507	4			2									
La Fayette, Ind	20,081	8												
Lebanon, Pa	19,240		3											
Manistee, Mich	12,381						4	1						
Marinette, Wis	14,610				6								1	
Marlboro, Mass	14,579	2									1			
Massillon, Ohio	13,879	3	1											
Medford, Mass	23,150	5			3		1						1	
Melrose, Mass	15,715	3			1						1		1	
Moline, Ill	24,199	2												
Montclair, N. J	21,550	2			1		1						1	

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality table, cities of the United States, for week ended Dec. 30, 1911—Continued.

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants—Con.														
Morristown, N. J	12,507	6												
Nanticoke, Pa	18,857	3			28									
Newburyport, Mass	19,240	2	2											
North Adams, Mass	22,012	10	1									1		
Northampton, Mass	19,431	7			1							1		
Ottumwa, Iowa	22,012	14					2							
Palo Alto, Cal					3									
Peekskill, N. Y		4												
Plainfield, N. J	22,550	5			1						1			
Pottstown, Pa		6										1		
Saratoga Springs, N. Y		5	1											
South Bethlehem, Pa	19,973	5	2		5							2	2	
Steelton, Pa	14,246	4	5	1					1					
Warren, Pa	11,080	1	2											
Wilkinsburg, Pa	18,924	5	3				1							
Woburn, Mass	15,308	5					1							

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

COLORADO.—Three months ended September 30, 1911. Population, 799,024. Total number of deaths from all causes 2,466, including diphtheria 15, measles 2, scarlet fever 6, tuberculosis 386, typhoid fever 94. Cases reported: Diphtheria 296, measles 49, scarlet fever 177, smallpox 68, typhoid fever 752.

FLORIDA.—Week ended December 30, 1911. Reports from the State board of health show diphtheria present in 3 localities with 6 cases; malaria in 3 localities with 8 cases; smallpox in 5 counties with 5 cases; tuberculosis in 4 localities with 7 cases; typhoid fever in 5 localities with 5 cases.

IOWA.—Month of November, 1911. Population, 2,224,771. Total number of deaths from all causes 1,600, including diphtheria 20, measles 5, scarlet fever 2, smallpox 27, tuberculosis 92, typhoid fever 47.

KANSAS.—Month of October, 1911. Population, 1,690,949. Total number of deaths from all causes not reported. The deaths include diphtheria 9, scarlet fever 1, smallpox 1, tuberculosis 17, typhoid fever 30. Cases reported: Diphtheria 111, measles 8, scarlet fever 170, smallpox 48, tuberculosis 39, typhoid fever 303.

PENNSYLVANIA.—Reports received from the State department of health show as follows:

Morbidity.—Month of September, 1911. The total number of communicable diseases reported was 6,230, including anterior poliomyelitis 30, cerebrospinal meningitis 11, chickenpox 134, diphtheria

1,349, epidemic dysentery 52, erysipelas 32, German measles 7, glanders 1, malarial fever 3, rabies 1, measles 210, mumps 84, pellagra 2, pneumonia 184, puerperal fever 1, scarlet fever 489, tetanus 13, trachoma 8, tuberculosis 1,170, typhoid fever 1,866, whooping cough 583.

Month of October, 1911. Total number of communicable diseases reported 8,265, including anterior poliomyelitis 22, anthrax 2, cerebrospinal meningitis 8, chickenpox 458, diphtheria 2,343, epidemic dysentery 1, erysipelas 89, German measles 5, glanders 1, malarial fever 18, measles 335, mumps 152, pneumonia 285, puerperal fever 4, scarlet fever 717, tetanus 9, trachoma 9, tuberculosis 1,072, typhoid fever 1,583, uncinariasis (Philadelphia) 1, whooping cough 1,149.

Month of November, 1911. Total number of communicable diseases reported 8,432, including anterior poliomyelitis 10, anthrax 2, cerebrospinal meningitis 4, chickenpox 1,145, diphtheria 2,242, epidemic dysentery 1, erysipelas 106, German measles 21, leprosy 2, malarial fever 12, measles 551, mumps 260, pneumonia 416, puerperal fever 6, scarlet fever 868, smallpox 7, tetanus 4, trachoma 3, tuberculosis 1,037, typhoid fever 1,018, whooping cough 717.

UTAH.—Month of November, 1911. Population, 373,351. Total number of deaths from all causes 255, including diphtheria 5, scarlet fever 5, smallpox 1, tuberculosis 3, typhoid fever 5. Cases reported: Diphtheria 65, measles 65, scarlet fever 153, smallpox 242, tuberculosis 4 (incomplete), typhoid fever 40.

FOREIGN AND INSULAR.

AUSTRALIA.

Sydney—Examination of Rats.

The following information was taken from bulletins issued by the department of public health of New South Wales: During the four weeks ended December 2, 1911, 2,014 rats were examined for plague infection. No plague-infected rat was found.

CHINA.

Amoy—Plague.

Information of the presence of plague at Amoy was received from the American consul at that port January 15.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911.

The last plague-infected rat was found at Honokaa December 18, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports, December 26:

Week ended Dec. 23, 1911.

Total rats and mongoose taken	448
Rats trapped	441
Mongoose trapped	7
Rats examined bacteriologically	384
Classification of rats trapped:	
Mus alexandrianus	77
Mus musculus	75
Mus norvegicus	22
Mus rattus	267
Average number of traps set daily	1,720

Mosquito-Eradication Measures at Honolulu.

The following statement of the progress of the campaign carried on for the destruction of mosquitoes in Honolulu was received from Passed Asst. Surg. McCoy: The work was inaugurated by Passed Asst. Surg. Currie, carried on by Surg. Blue, and is being continued by Passed Asst. Surg. McCoy acting in conjunction with the board of health and the civic sanitation committee. The figures given below are those reported. They fall below and probably constitute only a fraction of the work actually done. The statement includes the work to December 9, 1911, inclusive.

Mosquito-eradication measures conducted at Honolulu from Nov. 9 to Dec. 9, 1911, both inclusive.

Inspections of—	Total inspections.	Larvæ found in—	Cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled.	Ordered repaired.	Fixtures installed.	Screened.	Stocked with fish that destroy mosquito larvæ.
Gutters:												
House	2,566	341	1,464	336	1,020				62			
Street	763	171	188	470	107							
Standing water	2,168	734		1,525	599			119				38
Cesspools	2,459	337	129	2,111				27	70	4	94	
Privy vaults	2,950	329	290	2,293		13		29	339		91	
Holes and low places	3,188	586	141	1,573	232			1,627	1,627			
Catch basins	1,176	116	262	956		108		30	13	12		
Leaky fixtures	1,972	32		910					1,371	26		
Banana and other plants	26,129	1,291					26,129					
Swamps	278	144		174	58			3				30
Ponds	175	45		51	27			5				82
Troughs and tanks	990	149		338		805			9		69	28
Tubs and other receptacles	2,159	278		180		2,000					19	14
Tin cans, bottles, etc.	205,590	1,771					205,590					
Water barrels	1,071	322		223		718					100	19
Vacant houses	178	25	43	32	1							

Miles of ditch dug for drainage (approximately)	12
Holes in trees filled or drained (approximately)	8,000

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports, December 14: During the week ended November 18, 1911, 42 deaths from cholera and 8 from plague were reported in Calcutta; in all Bengal, 231 cases of plague with 160 deaths; in all India, 9,267 cases of plague with 7,252 deaths.

ITALY.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected during the week ended December 23, 1911.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Dec. 17	Taormina	Philadelphia	397	90	720
23	Adriatic	New York	523	128	690
	Total		920	218	1,410

PALERMO.

Dec. 18	Teresa	New York			

MEXICO.

Yellow Fever at Merida.

During the week ended December 30, 1911, one case of yellow fever with 1 death was officially reported at Merida. The total number of cases reported from August 1 to December 30, 1911, was 50, with 26 deaths.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED JAN. 19, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Calcutta	Nov. 12-18		42	
Madras	Nov. 26-Dec. 9	216	167	Madras presidency, Dec. 1-31: Cases 3,879; deaths, 2,412.
Rangoon	Oct. 1-31	2	1	
Italy				Dec. 10-17: Cases 18, deaths 10.
Provinces—				
Caltanissetta	Dec. 10-17	2		
Girgenti	do	16	10	
Java:				
Batavia	Nov. 19-Dec. 2	8	3	
Persia:				
Adaban	Nov. 4	1	1	
Turkey in Asia:				
Adana	Dec. 2-6	16	5	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Jiddah	Dec. 2-10	77	46	
Mekka	Dec. 4-10	716	678	
Mersina	Dec. 6	1		
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Merida	Dec. 24-30	1	1	
At Sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Sept. 1-30		2	
British East Africa:				
Kismayu	Oct. 15-25	[1] 2		One case pneumonic.
Chile:				
Iquique	Nov. 26-Dec. 9	2	1	
China:				
Amoy	Jan. 15			Present.
India:				
Bombay	Dec. 3-9	8	7	
Calcutta	Nov. 12-18		8	
Rangoon	Oct. 1-31	26	27	
Mauritius	Nov. 10-16	2	1	
Straits Settlements:				
Singapore	Nov. 19-25	1	1	

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[1] From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, Dec. 29, 1911.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended Jan. 19, 1912.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	Nov. 28-Dec. 4	1		
Canada:				
Ontario—				
Ottawa	Dec. 24-30	5		
Quebec—				
Quebec	Dec. 10-Jan. 6	120		Jan. 6, 14 cases present; diminishing.
France:				
Paris	Dec. 10-16	11	2	
India:				
Bombay	Dec. 3-9	6	5	
Madras	Nov. 26-Dec. 9	18	10	
Rangoon	Oct. 1-31	18	6	
Italy:				
Leghorn	Dec. 17-23	38		
Naples	do	10		
Java:				
Batavia	Nov. 19-Dec. 2	7	2	
Mexico:				
Mazatlan	Dec. 27-Jan. 2		1	
Porfirio Diaz	Dec. 17-Jan. 6	17	17	
San Luis Potosi	Nov. 12-25	2		
Portugal:				
Lisbon	Dec. 9-23	8		
Russia:				
Libau	Dec. 17-23	1		
St. Petersburg	Dec. 9-16	7	1	
Spain:				
Cadiz	Nov. 1-30		5	
Valencia	Dec. 19-23	11	1	
Straits Settlements:				
Singapore	Nov. 19-25	2		
Teneriffe:				
Santa Cruz	Dec. 17-23		10	
Turkey in Asia:				
Beirut	do	12	4	

REPORTS RECEIVED FROM DEC. 30, 1911, TO JAN. 12, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Croatia and Slavonia				Total Oct. 22-Dec. 3: Cases, 31.
Sriem	Oct. 22-Dec. 3	31		
Hungary				Total Nov. 19-Dec. 9: Cases 16.
Torontal	Nov. 19-Dec. 9	16	2	
Bulgaria:				
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24-Oct. 9: Cases, 322; deaths 256.
Batavia	Nov. 12-18	6	2	
India:				
Calcutta	Nov. 5-11		39	
Italy				Total June 8-Dec. 9: Cases, 15,931; deaths, 5,997.
Provinces—				
Caltanisetta	Nov. 26-Dec. 2	5	5	
Girgenti	Nov. 26-Dec. 9	69	40	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	do	1	1	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30 to Jan. 12, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Tunis Regency				Total Nov. 25-Dec. 7: Cases 169; deaths, 210.
Beja district	Nov. 25-Dec. 7	30	35	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia:				
Kharput	Nov. 19-Dec. 9	29	22	
Mersine	Dec. 1-7	1	1	
Turkey in Europe:				
Constantinople	Oct. 24-30	5	1	
Saloniki vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	Nov. 19-Dec. 2		4	
Para	Dec. 9-16	1	1	
Ecuador:				
Bucay	Nov. 16-30	2		
Duran	Dec. 1-15	3	2	
Guayaquil	Nov. 16-Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Merida	Nov. 12-Dec. 30	5	6	Total Aug. 1-Dec. 30: Cases, 50; deaths, 26.
Venezuela:				
Caracas	Nov. 16-Dec. 7	11		
Sabana Grande	Dec. 12			Epidemic.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096. Vol. XXVI.
Brazil:				
Rio de Janeiro	Nov. 12-Dec. 2	3	1	
Chile:				
Iquique	Nov. 12-25	1	2	
Dutch East Indies:				
Java—				
Pasoeroean Residency, Malang District.	Nov. 12-Dec. 2	23	12	
Soerobaya	Oct. 17-27	2		
Ecuador:				
Guayaquil	Nov. 16-Dec. 15	102	42	
Egypt:				
Provinces—				
Assiout	Oct. 14-Dec. 13	16	14	
Kena	Nov. 20-Dec. 13	3	3	
Minieh	Dec. 13	1		
India:				
Bombay	Nov. 19-Dec. 2	17	16	
Calcutta	Nov. 11		6	
Karachi	Nov. 26-Dec. 2		3	
Indo-China:				
Saigon	Nov. 13-19	3		
Mauritius	Nov. 3-9	4	4	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Nov. 28-Dec. 20	87	84	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 12, 1912.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	do		25	
Austria-Hungary:				
Trieste	Dec. 3-9	1		
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Nov. 15		179	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Dec. 2	1	1	
Canada:				
British Columbia—	Dec. 24-30			
Nelson		1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-23	12		
Sarnia	Oct. 17-23	1		
Quebec—				
Montreal	Dec. 17-23	2		
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Talcahuano	Nov. 26-Dec. 9	7	2	
Valparaiso	Dec. 3-9	43		
China:				
Canton	Nov. 11-25	15	3	
Chungking	Nov. 18			Present.
Hongkong	Nov. 12-25	16	10	
Cuba:				
Habana	Dec. 19	1		From German s. s. Frankenwald from Spain and Canary Islands.
France:				
Marseille	Nov. 1-30		1	
Paris	Dec. 3-9	15		
India:				
Bombay	Nov. 19-Dec. 2	19	8	
Indo-China:				
Saigon	Nov. 13-19	2		
Italy:				
Genoa	Dec. 1-15	6	1	
Leghorn	Dec. 16	5	1	
Naples	Dec. 3-16	16		
Palermo	Nov. 26-Dec. 16	950	322	
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Java:				
Batavia	do		1	
Mexico:				
Aguascalientes	Dec. 18-24		1	
Chihuahua	Nov. 20-Dec. 26	30	6	
Coahuila, State	Oct. 1-30		16	
Juarez	Dec. 19-23	1		
Magdalena	Dec. 23	45	13	
Mazatlan	Dec. 11-26		3	
Mexico	Nov. 26-Dec. 9	4	2	
Monterey	Dec. 11-24		2	
Porfirio	Dec. 3-9	3	3	
Sandoval	Dec. 16			Present.
Tampico	Dec. 1-20	4	4	
Tapachula	Nov. 1-22		13	
Russia:				
Moscow	Nov. 19-Dec. 9	7	2	
Odessa	Nov. 26-Dec. 16	5	1	
St. Petersburg	Nov. 19-Dec. 9	23	6	
Spain:				
Valencia	Dec. 3-16	16	2	
Switzerland:				
Zurich, Canton	Dec. 3-9	1		From the Orient.
Teneriffe:				
Santa Cruz	Dec. 3-16		10	
Turkey in Asia:				
Beirut	do	18	6	
Turkey in Europe:				
Constantinople	Dec. 4-24		16	
Uruguay:				
Montevideo	Sept. 1-Oct. 31	19	3	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 1	3	1	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Dec. 23	153,108	70									1		1
Aden	Dec. 4	45,859	29	5									1	
Aguascalientes	Dec. 3	40,000	50						4					
Do	Dec. 10		30						5			1		
Do	Dec. 17		34	1					2			1		
Amsterdam	Dec. 23	579,705	126	13						1			1	2
Antwerp	Dec. 16	327,668	74	6						1		2		
Athens	...do...	250,010	97	16							2	1		
Barcelona	...do...	533,180	240	22								3		
Barranquilla	Dec. 23	40,000	34									1		
Batavia	Nov. 25	217,630	10			2		1		1		1		
Do	Dec. 2		10			1		1						
Beirut	Dec. 23	80,000	20	2				4		6				
Belfast	...do...	385,492	134	23							1	2		8
Belgrade	...do...	90,050	32								4	1		
Birmingham	...do...	842,512	276								2	3	2	9
Do	Dec. 30		264								2	2		15
Bristol	...do...	357,509	111	13								1	1	
Bombay	Dec. 9	977,822	635	34	7			5						
Bordeaux	Dec. 23	253,000		14						1				
Bradford	Dec. 16	288,723	96	8						2		3		
Do	Dec. 23		85	3							1	2		
Bremen	Dec. 9	246,850	70	13							1	3		1
Brunswick	Dec. 3-16	145,000		9							6	26		
Calcutta	Nov. 18	890,493	543	37	8	42								
Cartagena	Dec. 16	30,000	16	2										1
Christiania	Dec. 23	245,000	66	11							1	2	2	
Colombo	Dec. 2	213,974	181	17						9				
Copenhagen	Dec. 9	462,000	110	16							1			
Do	Dec. 16		111	18							2	1		1
Dundee	Dec. 23	171,006	63	5								2		1
Edinburgh	...do...	320,829	108	6							1	1	2	1
Glasgow	Dec. 29	784,655	273							1	1	1	25	5
Hongkong	Dec. 2	336,488						8				3		
Iquique	...do...	40,000		4										
Do	Dec. 9			5	1					1				
Hamburg	Dec. 23	931,035	270	27						1	4	18	4	
Juarez	Dec. 30	6,500	12									1		
Kobe	Dec. 10	404,851	129							2				
Do	Dec. 17		164							2		3		
Leeds	Dec. 23	445,568	173	8							2	47		
Do	Dec. 30		125	3								4	1	
Leith	Dec. 23	80,674	25	3								1		
Liverpool	...do...	747,627	239	21						1	1	1	3	
Do	Dec. 30		267	32							2	3	5	3
London	Dec. 23	7,269,752	2,014							5	7	27	14	12
Lubec	...do...	106,000	26	4									1	
Lyon	Dec. 16	523,796	166	43						1		2		
Madras	Dec. 2	518,660	691			94		5		1			1	
Do	Dec. 9		639			73		5						
Magdeburg	...do...	285,518	130	8								7		
Mazatlan	Jan. 2	22,000	29	1				1						
Manchester	Dec. 23	631,533	235							2	3	1	2	1
Monterey	Dec. 31	100,000	68	7								1		
Montreal	Jan. 6	466,197	150	20						2	2	4		6
Munich	Dec. 16	597,000	174	21								2		1
Nagoya	Dec. 9	418,627	114							4		1		
Nantes	Dec. 17	161,908	70	11						2				
Newcastle-on-Tyne	Dec. 16	267,261	96	11						1		2		
Do	Dec. 23		75	8								1	1	
Nottingham	Dec. 16	259,942	98									2	4	
Do	Dec. 23		90							1		1	10	1
Palermo	...do...	340,000	252	12				106		2	2			
Paris	Dec. 16	2,846,986	902	215				2		8	1	6	6	2
Patras	Dec. 24	40,000	14	2						1				
Porfirio Diaz	Dec. 23	16,000	19					10						
Do	Dec. 30		7					4						
Do	Jan. 6		5					3						
Ottawa	Dec. 30	90,000	16									1		

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Quebec	Dec. 16	78,200								2				
Do	Jan. 6									1				
St. Petersburg	Dec. 16	1,907,708	728	134				1		29	15	9	27	4
San Luis Potosi	Nov. 18	82,943	45	3										
Do	Nov. 25		47	4						1				1
Santa Cruz de Teneriffe	Dec. 23	46,000	21	2				10						
Santiago de Cuba	Dec. 30	53,614	18	2						1				
Sarnia	Jan. 6	9,936	7							3				
Shanghai	Dec. 10	492,000	129	14				1				1		
Singapore	Nov. 25	303,328	233	34	1					2				
Southampton	Dec. 30	119,324	27	2										1
Stettin	Dec. 16	237,000	87	12							1	1		
Swansea	Dec. 23	115,100	42									2		
Turin	Dec. 17	401,555	121	17									1	
Valencia	Dec. 23	240,000	97	3				1						
Vladivostok	Oct. 28	84,578	7	3						1	1	1		
Do	Nov. 3		11	1							2			
Do	Nov. 13									2	1	1		1
Winnipeg	Dec. 23	151,958	31	1								1		
Do	Jan. 6		33	3						1	1	2	2	
Yokkaichi	Dec. 2	44,564	13											

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (untabulated).

ARGENTINA—*Buenos Aires.*—Month of October, 1911. Population, 1,343,156. Total number of deaths from all causes 2,054, including diphtheria 24, measles 10, scarlet fever 10, smallpox 6, tuberculosis 266, typhoid fever 13.

Rosario.—Month of October, 1911. Population, 207,260. Total number of deaths from all causes 378, including diphtheria 6, measles 3, smallpox 25, tuberculosis 38, typhoid fever 1.

AUSTRALIA—*New Castle.*—Month of October, 1911. Population, 60,500. Total number of deaths from all causes 25, including diphtheria 1, tuberculosis 1.

BRAZIL—*Bahia.*—Month of July, 1911. Population, 292,000. Total number of deaths from all causes 422, including measles 1, plague 1, smallpox 1, tuberculosis 64, typhoid fever 2.

Month of August, 1911. Total number of deaths from all causes 399, including plague 1, tuberculosis 58, typhoid fever 2.

Santos.—Month of October, 1911. Population, 85,000. Total number of deaths from all causes 100, including measles 1, typhoid fever 2.

GREAT BRITAIN.—Week ended December 16, 1911.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 16.4 per 1,000 of the population, which is estimated at 16,157,797.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 20.9 per 1,000 of the population, which is estimated at 1,149,495. The lowest rate was recorded at Kilkenny, viz, 5, and the highest at Newry, viz, 39.3, per 1,000.

Scotland.—The deaths registered in 8 principal towns correspond to an annual rate of 17.9 per 1,000 of the population, which is estimated at 1,710,291. The lowest rate was recorded at Perth, viz, 7.3, and the highest at Aberdeen, viz, 21.4, per 1,000. The total number of deaths from all causes was 587, including diphtheria 6, measles 32, scarlet fever 4, typhoid fever 1.

Mexico—*State of Coahuila.*—Month of October, 1911. Population, 280,899. Total number of deaths from all causes 458, including diphtheria 3, scarlet fever 5, smallpox 16, tuberculosis 30.

Sierra Leone—*Freetown.*—Month of November, 1911. Population 40,000. Total number of deaths from all causes 60. No contagious diseases.

Uruguay—*Montevideo.*—Month of October, 1911. Population 321,224. Total number of deaths from all causes 488, including diphtheria 1, scarlet fever 1, smallpox 1, tuberculosis 76, typhoid fever 1.

By authority of the Secretary of the Treasury:

Rupert Blue,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

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EPIDEMIC CEREBROSPINAL MENINGITIS.

A REVIEW OF ITS ETIOLOGY, TRANSMISSION, AND SPECIFIC THERAPY, WITH REFERENCE TO PUBLIC MEASURES FOR ITS CONTROL.

By **W. H. Frost, Passed Assistant Surgeon, Public Health and Marine-Hospital Service.**

The recently reported epidemic outbreaks of cerebrospinal meningitis in various localities in the southern and southwestern portions of the United States have lent to the questions of the etiology, epidemiology, prophylaxis, and treatment of the disease a vital present interest. In response to numerous inquiries received from public-health authorities this paper is prepared, by direction of the Surgeon General, to present in a review, as briefly as possible, such facts and deductions concerning the disease as may be of special interest to health officers.

According to Netter and Debré,[1] from whose most excellent monograph the following historical sketch is abstracted, the first clearly recognized epidemic of cerebrospinal meningitis occurred in Geneva, Switzerland, in the spring of 1805, followed during the years 1806–1814 by a number of scattered outbreaks in widely separated localities of France and Germany. Coincident with this first series of epidemics in Europe occurred a similar series in America, beginning with an outbreak at Medfield, Mass., in 1806 and continuing until 1819, visiting during this period many localities in the United States, and reaching Canada.

The history of the disease since that time, shows, according to these authors, periods of epidemic or pandemic prevalence, alternating with periods of comparative rarity.

From 1836 to 1850 epidemics reappeared in Europe in France, Germany, Austria, Italy, Spain, Ireland, and Denmark; and in Algeria. In America, also, there was a succession of outbreaks from 1842 to 1850.

In its third period of prevalence, from 1850 to 1860, the disease visited chiefly the Scandinavian Peninsula, hitherto spared, causing there over 4,000 deaths from 1854 to 1861.

In 1861–62 epidemics occurred in various sections of Germany and in Russia, and a few years later in Ireland. Coincident outbreaks occurred during this period also in the United States.

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[1] Netter, Arnold; and Debré, Robert; La méningite cérébrospin [illegible] Masson & Cie, 292 p.

From 1865–1885 epidemics were rare and generally small, except in the United States, where outbreaks occurred in New York (1872) and Boston (1874).

The years 1885–86 were marked by a recrudescence in European countries (France, Italy, Austria, Scandinavia) and an epidemic in the Fiji Islands.

The next period of epidemic prevalence was from 1896 to 1903, when the disease appeared in France, Germany, Austria, Norway, Scotland, Ireland, Bosnia, Italy, Algeria, the United States and Portugal (1901–1905).

Following close upon this last has come another cycle of epidemics dating from about 1904 in the United States, 1905 in Germany (especially Prussia), and 1908 in France. Apparently this last wave has not yet passed. During the winter and spring of 1911, outbreaks occurred in several of the Southern States of the United States; and, as above stated, there are reports of further outbreaks in the South and Southwest at present.

During the intermissions between epidemics, cerebrospinal meningitis has never disappeared entirely, continuing to appear annually and almost ubiquitously in sporadic cases and small outbreaks.

Nor can it be said that the pandemics have shown an orderly progression. On the contrary, they are more usually ushered in by coincident epidemics in widely separated localities.

SPECIFIC ETIOLOGY.

While the studies of the earlier epidemics had placed the clinical knowledge of cerebrospinal meningitis on a fairly sound basis, it was not until the outbreaks beginning in 1885 that progress was made toward determining the specific etiology of the disease; and it is only within the last few years that apparently contradictory observations have been harmonized by more extensive research with more exact technical methods.

In 1887 Weichselbaum described an organism, the *diplococcus intracellularis meningitidis*, isolated from the meningeal exudate of several cases of cerebrospinal meningitis, and suggested it as the specific cause of the disease. His observations and views, though they were the subject of much dispute in the succeeding years, have recently been so fully confirmed and so widely extended that at present the *diplococcus intracellularis meningitidis* (now commonly called "meningococcus") is almost universally accepted as the specific causative agent of this disease, whether occurring epidemically or sporadically. The evidence upon which this conclusion is based is: That the meningococcus is commonly, almost constantly, demonstrable intra-vitam or post mortem in the tissues and secretions of persons suffering from the disease; especially in the exudate from the tissues most constantly and severely affected, namely, the meninges.

The final link in the evidence of the causative relation of the meningococcus to cerebrospinal meningitis, namely, the reproduction of a clinically similar disease in lower animals by the inoculation of pure cultures, has not yet been satisfactorily accomplished. Acute meningitis can be produced in monkeys and occasionally in other animals by the subdural injection of pure cultures of the meningococcus; but this is of itself hardly convincing evidence, since quite similar effects may be produced by the subdural injection of various other bacteria.

THE DIPLOCOCCUS INTRACELLULARIS MENINGITIDIS OR MENINGOCOCCUS.

Morphology.—The meningococcus as found both in exudates and in cultures from artificial media, occurs in pairs, not infrequently in tetrads. In the cerebrospinal fluid the diplococci are characteristically located within the cells of the exudate, though by no means confined to this location. Irregularities in form and size are quite characteristic, especially in cultures taken from artificial media. Forms both larger and smaller than typical diplococci, as well as various involution forms, are encountered.

Staining.—The diplococcus takes the ordinary aniline stains readily. When stained by Gram's process it is decolorized. This characteristic serves to distinguish it from the more common pus-forming staphylococci and streptococci as well as from the *pneumococcus* and the *diplococcus capsulatus*, either of which may give rise to meningitic infections clinically similar to the specific cerebrospinal meningitis and may be found in cerebrospinal fluid from such cases.

Cultural characteristics.—The meningococcus grows aerobically on artificial media at temperatures from 25° to 42° C., preferably at about 37° C.

It grows best on media containing animal proteid, preferably human, such as ascitic or pleuritic fluid, blood serum, or defibrinated blood. On ordinary culture media (agar, gelatin, bouillon) the organisms grow sparsely if at all; when freshly isolated, more freely after cultivation for a while on the more suitable media. The addition of glucose (1 per cent to 5 per cent) to the culture media favors its growth.

According to Elser and Huntoon[1] the optimum reaction of media for the meningococcus is about +.6 to phenolphthalein.

The fermentations caused by the meningococcus in media containing various carbohydrates are fairly constant, and a very considerable aid in differentiating it from a group of diplococci quite similar in morphology, in staining, and in their growth on many media.

The fermentation tests may be made in a great variety of liquid or solid media. According to Elser and Huntoon, they may best be made in agar prepared from sugar-free bouillon, with the addition of ascitic fluid and of litmus to serve as an indicator.

Agglutination with specific immune serum.—The serum of animals immunized to the meningococcus by repeated injections of pure cultures, contains agglutinins which are, within certain limits, specific for the meningococcus. By the careful, quantitative application of this test, with serum of known potency, the meningococcus may usually be differentiated from other Gram-negative diplococci, including the culturally similar pseudomeningococcus and the closely allied gonococcus. The test will, however, often be misleading unless applied with the utmost care, with a full appreciation of the quantitative discrepancies due to differences between strains of the meningococci and to "group" agglutination of other organisms. It may even be necessary to resort to the more complicated tests of agglutinin-absorbing capacity to arrive at a satisfactory differentiation.

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[1] Elser, W. J., and Huntoon, Frank, Stud [illegible] Med. Res 377–541.

BACTERIOLOGICAL DIAGNOSIS.

It is important for two reasons to distinguish cerebrospinal meningitis due to the meningococcus from other forms of meningitis.

First, in meningitis due to the meningococcus specific therapy offers a hope of cure, largely proportional to the promptness of its application.

Second, prophylactic measures not necessary in other forms of meningitis are required in the case of true cerebrospinal meningitis due to the meningococcus.

Not infrequently a certain diagnosis can be made only by bacteriological demonstration of the organism concerned.

The meningococcus may be isolated from the cerebrospinal fluid, blood, or nasopharyngeal secretions of persons sick with meningitis, post mortem from the meningeal exudate, and sometimes from the blood and various viscera.

For all practical purposes, the bacteriological diagnosis of cerebrospinal meningitis during life is based upon the demonstration of the meningococcus in the cerebrospinal fluid.

For the purposes of diagnosis the cerebrospinal fluid may be examined directly under the microscope or planted in media suitable for the isolation of the meningococcus in pure culture.

1. *Microscopic examination of the cerebrospinal fluid.*—Cerebrospinal fluid withdrawn by lumbar puncture with strict aseptic precautions is received in a clean sterile test tube. The sediment, preferably obtained by centrifuging, is spread evenly on clean glass slides, dried in the air, and fixed by passing through a flame.

The films are then stained by Gram's method, viz:

(*a*) Three minutes with aniline-water gentian violet solution.

(*b*) Wash lightly in water.

(*c*) Lugol's solution (iodine, 1 gram; potass iodide, 2 grams; water, 300 cc.), two minutes.

(*d*) Blot off this fluid.

(*e*) Decolorize the film by washing with absolute alcohol for 30 seconds or more, depending upon the thickness of the slide.

(*f*) Counterstain 30 seconds with an aqueous solution of bismarck brown, or with ordinary carbol-fuchsin diluted with nine volumes of distilled water.

The reagents and technique of staining should be carefully controlled by staining coincidently films of bacteria known to be Gram-negative (*B. coli, B. typhosus*) and others known to be Gram-positive (*Staphylococcus pyogenes aureus, Pneumococcus*, etc.).

Until one can get consistent results with Gram's method of staining, obviously he can not rely upon it for the differentiation of the meningococcus.

In films properly stained by Gram's method meningococci, when present, will be found to have been decolorized by the alcohol and stained with the subsequently applied counterstain. They will be found in pairs and tetrads within the cells of the exudate, as well as extracellularly.

For all practical purposes the detection of Gram-negative diplococci in cerebrospinal fluid, the gross and microscopic appearance of which indicates the existence of an acute meningitis, is sufficient to establish the diagnosis of cerebrospinal (meningococcus) meningitis. This diagnosis is still further confirmed if the diplococci are found within the cells of the fluid.

While there are numerous other Gram-negative diplococci which can not be distinguished from the meningococcus by their morphology, none of these is likely to occur in the cerebrospinal fluid from cases of acute meningitis.

The pneumococcus and streptococci, especially the *streptococcus capsulatus*, may give rise to cases of meningitis clinically similar to true cerebrospinal meningitis, and may be found in the cerebrospinal fluid from such cases. They are distinguished from the meningococcus most readily by their different reaction toward Gram's stain, since these organisms are Gram-positive.

Elser and Huntoon were able to demonstrate the meningococcus by microscopic examination of the cerebrospinal fluid in 141 out of 171 cases examined (82.46 per cent). In some of the cases in which this examination was negative the meningococcus was isolated from the cerebrospinal fluid by culture. A single negative examination of cerebrospinal fluid does not necessarily exclude the diagnosis of cerebrospinal meningitis.

2. The isolation of the meningococcus in pure culture and its complete identification are processes requiring a refined bacteriologic technique, the details of which need not be discussed here. It may be mentioned, however, that intracellular Gram-negative diplococci can not be assumed to be meningococci unless found in the meningeal exudate. Many varieties of diplococci normally present in the nose and throat of man greatly resemble the meningococcus, and the demonstration of the latter in the naso-pharyngeal secretions involves complete identification by morphologic, cultural, and agglutination tests.

OCCURRENCE OF THE MICROCOCCUS.

Within recent years very extensive studies have been made to determine the natural habitat of the meningoccus. So far it has been encountered only as a parasite of man. The results of these studies may be briefly summarized as follows:

1. *Occurrence in the bodies of persons suffering from cerebrospinal meningitis.*—Following is a statement of the frequency with which the organism has been satisfactorily demonstrated by various observers in the cerebrospinal fluid of patients, either intra-vitam or post-mortem.[1]

	Number of specimens examined.	Number of specimens showing meningococcus.
Councilman, Mallory, and Wright	55	38
Faber	31	27
Bettercourt and Franca	271	271
Cochez and Lemaire	44	39
Schotmüller	49	43
Reuterberg	26	8
Weichselbaum and Gohn	58	39
Von Lingelsheim	308	198
Flugge	144	44
Elser and Huntoon[2]	210	194

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[1] Cited by Kutscher in Kolle und Wassermann's Handbuch der Pathogenen Mikroorganismen, I Ergans. Bd., Jena, 1907, Gustav Fischer.

[2] Loc. cit.

The considerable variations in the results of different workers are explained by the different circumstances attending the collection of specimens and variations in the technique of examining them. Some investigators have worked chiefly with specimens obtained under favorable circumstances, with facilities for immediate examination; others with specimens chiefly sent in from distant points, subject to delay and contamination before examination. Again, some of these figures are based on direct microscopic examination of exudates, others on cultures of the fluid in various media, still others on the combined results of both methods. Where circumstances have been favorable and the technique careful, the proportion of positive results has generally been high.

The meningococcus has also not infrequently been demonstrated in the blood of patients with cerebrospinal meningitis, most frequently early in the course of the disease, and occasionally before the onset of meningitic symptoms. Elser and Huntoon report finding the organism present in the blood of 25 per cent of patients examined. Apparently, however, the organisms in the blood are relatively few—much less abundant than in the cerebrospinal fluid.

Special interest attaches to the demonstration of the meningococcus in the nasopharyngeal secretions of patients. In a recent extensive study, von Lingelsheim[1] was able to isolate the meningococcus from the throats of 182 out of 787 patients examined. These figures include a number of specimens examined under unfavorable circumstances, sent in to the laboratory from a distance. The meningococcus is demonstrable in the nasopharynx most constantly in the early stages of the disease, as illustrated by the following results reported by von Lingelsheim.

Day of disease on which specimens were taken.	Number of specimens examined.	Number of specimens in which meningococci were demonstrated.	Percentage of specimens in which meningococci were demonstrated.
First to fifth day	156	104	66.0
Sixth to tenth day	57	14	24.56
Eleventh to twentieth day	62	7	11.29
Twenty-first day or later	115	5	4.39
Total	390	130	33.3

Netter and Debré (*La meningite cerebrospinale*, pp. 42–43) report similar results in 100 examinations made upon 49 patients, viz:

Of specimens examined in—	Per cent positive.
First week	78.33
Second week	60.00
Third week	50.00
Fourth week	25.00
After thirtieth day	15.35

They also cite the following figures from Goodwin and Sholly:

Of examinations during—	Per cent positive.
First week	54.5
Second week	33.3
After second month	6.2

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[1] Zeitschr. f. Hyg. u. Infectionskrankh., 1908, Bd. 50, pp 457-483.

All of these results refer to the isolation of the meningococcus in pure culture, a fairly difficult bacteriological procedure; which may well be assumed not infrequently to fail to demonstrate the meningococcus even when present.

It seems from the above and other concordant results that the meningococcus is quite frequently (probably constantly) present in the nasopharynx of patients in the early stage of infection; that it usually disappears rapidly from this location, often disappearing completely before the subsidence of the meningitic symptoms; that in rather exceptional instances it may persist in the nasopharynx, even after convalescence, for at least several weeks or months.

2. *Occurrence of the meningococcus in the nasopharynx of healthy persons in the vicinity of cases of meningitis.*—As the result of many recent exhaustive intensive studies it has now been well established that the meningococcus is quite frequently present in the nasopharynx of persons who show either no clinical manifestations whatsoever of such infection or only slight local manifestations (pharyngitis, coryza). These "meningococcus carriers" have been demonstrated almost exclusively among (1) persons intimately associated with cases of meningitis; (2) persons not directly associated with clinically recognizable cases but residing in communities where the disease is epidemic; and (3) less rarely among persons in communities where only sporadic cases of meningitis have occurred.

Albrecht and Ghon (1901) first isolated the meningococcus from the nasopharynx of a healthy person in contact with a meningitis patient.

The following tabulation presents the results of some of the more extensive recent researches upon this phase of the subject:

Demonstration of the meningococcus in the nasopharynx of apparently healthy persons.

Locality.	Condition.	Percentage of persons examined shown to be carriers.
Dieudonné (1906) during small outbreak in garrison at Munich examined. (Centralblatt f. Bakt., 1906, p. 418.)	(a) 39 men from a dormitory in which there had been several caser of meningitis—found 5 carriers.	12.8
	(b) 29 soldiers from the same battalion who applied for treatment on account of nasopharyngeal troubles—found 4 carriers.	13.8
	(c) 20 men from a regiment in which there had been no case of meningitis—found no carriers.	0.0
Osterman (1905–6) during an epidemic in vicinity of Breslau examined. (Deutsch. Med. Wochenschr., 1906, 1, p. 414.)	(a) 24 persons, members of families in which there were cases of meningitis—found 17 carriers.	70.8
	(b) 51 school children in a town where there had been a recent case—found 2 carriers, associates of patient's sister.	4.0
	(c) 10 persons not in contact with any case—found no carriers..	0.0
Bochalli, in garrison at Beuthen, Prussia, in which there had been a case recently, examined (Zeitschr. f. Hyg. u. Infektionskrank. Bd. LXI, pp. 454–464).	(a) 16 men associated in dormitory with a recent patient—found 10 carriers.	62.5
	(b) 114 men of the same company, not roommates of patient—found 13 carriers.	11.4
	(c) 355 men in the 3 other companies of same garrison—found 19 carriers.	5.4
	(d) Control: 40 men from 2 battalions in Gleiwitz, where there had been no cases of meningitis—found no carriers.	0.0
Von Lingelsheim, in vicinity of Beuthen, Prussia, during an epidemic, examined (Zeitschr. f. Hyg. u. Infektionskrank, 1908, Bd. 59, pp. 457–483).	(a) 387 persons in close contact with cases of meningitis—found 28 carriers.	7.23
	(b) 127 persons not in contact with cases—found no carriers...	0.0
	(c) 184 children suf[illegible] fever, measles, whooping cough (appare[illegible] ith any cases of meningitis)—found [illegible]	0.0

Demonstration of the meningococcus in the nasopharynx of apparently healthy persons—Continued.

Locality.	Condition.	Percentage of persons examined shown to be carriers.
Bruns and Hohn, in valley of the Ruhr, Prussia, during severe epidemic in 1907, examined (Klin. Jahrbuch. Jena, 1908, Bd. XVIII, pp. 285–310).	(a) 3,154 healthy persons in community where epidemic prevailed—found 405 carriers.	14.7
	(b) Of the above specimens were taken in the immediate vicinity, under the investigators' supervision, in 1,786 cases—showing 401 carriers.	22.5
	(c) Including only members of families in which cases of meningitis had occurred—609 were examined and 224 were found carriers.	36.78
	(d) Persons in the community examined under favorable circumstances during and after the epidemic, not directly associated with any cases of meningitis; 380 examined—30 found carriers.	7.9
Herford, during epidemic at Altona, examined (cited by Netter and Debré, loc. cit., p. 44).	172 persons in the families with cases of meningitis— found 43 carriers.	25.0
Trautmann, at Hamburg, examined (cited by Netter and Debré, loc. cit.).	261 persons in families with cases of meningitis—found 24 carriers.	9.2
Mayer, Waldmann, Furst, and Gruber examined (Münch. med. Wochenschr., 1910, vol. 57, p. 1584).	(a) 1,911 men from various garrisons from 1908 to 1910 at the time of occurrence of cases of meningitis in the respective garrisons—found 47 carriers (associated with a total of 46 cases of meningitis).	2.46
	(b) In 1910, at Munich, examined the whole garrison, 9,111 men. It is implied that there was no recent case of meningitis in the garrison at this time, but there had been one or more cases annually since 1908 in each of the barracks mentioned—158 of these men were found to be meningococcus carriers.	1.73
Kolle and Wasserman, in Berlin, in 1906 (cited by V. Lingelsheim) examined.	114 residents of Berlin; found 2 carriers, both of whom had been associated with suspicious cases of meningitis—possibly sporadic cerebrospinal meningitis.	1.8
Droba and Kucera, 1906, examined (cited by von Lingelsheim).	160 children in a community free from meningitis—found no carriers.	0.0
Kutscher, 1905 (cited by Kelsch, Rev. d'Hygiene, 1911, vol. 33, pp. 1-53) examined.	56 patients in Berlin for various affections—found 4 carriers.	7.4
Huber and Kutscher (cited by Kelsch, Rev. d'Hygiene, 1911, vol. 33, pp. 1-53) examined.	A detachment of 408 soldiers free from meningitis both before and after the time of examination—found 8 carriers.	2.0

The results of these investigations, which are further confirmed by the generally similar results of a number of others, while they show wide quantitative differences, all indicate the following conclusions:

1. Apparently healthy persons in the immediate vicinity of cases of cerebrospinal meningitis very frequently harbor the meningococci in their nasopharynx.
2. Apparently healthy persons themselves not in contact with any cases of meningitis, but residing in communities where an epidemic prevails, are not infrequently found to be meningococcus carriers.
3. Apparently healthy persons in communities where there have been only scattered cases of meningitis or none at all for several months are less frequently found to be meningococcus carriers.
4. The meningococcus is very rarely found in the throats of persons in communities quite free from cases of cerebrospinal meningitis.

The figures given by Bruns and Hohn show, moreover, that the proportion of carriers in a community was roughly proportional to the course of the epidemic. This is illustrated by the following table, showing, by months, the number of cases of meningitis in the vicinity studied by them and the proportion of well persons found to be carriers:

1907	Number of cases of meningitis.	Number of well persons examined.	Number of carriers found.	Percentages of carriers among well persons examined.
				Per cent.
March	148	120	37	30.1
April	278	641	152	23.7
May	327	730	113	15.5
June	188	644	88	12.1
July	146	616	53	8.6
August	68	403	22	5.5
Total	1,155	3,154	465	14.7

Their results are similar if only the examinations of persons in the same families with cases of meningitis are considered.

1907	Number of families examined.	Number of families in which carriers were found.	Total number of persons in these families.	Number and percentage of meningococcus carriers among these persons.
March	7	7	23	14 persons, 61.7 per cent.
April	39	37	135	67 persons, 50 per cent.
May	43	40	172	81 persons, 47 per cent.
June	23	18	93	34 persons, 36.6 per cent.
July	21	11	67	18 persons, 27 per cent.
August	22	7	119	10 persons, 8.5 per cent.
Total	155	120	609	224 persons, 36.78 per cent.

It is thus shown that during this epidemic the percentage of carriers, both among persons in close contact with patients and in the community generally, was greatest at the beginning and height of the epidemic, declining as the epidemic declined. Indeed, it would appear from these figures that the infection must already have been widespread in the community before the existence of an epidemic was realized.

The persistence of the meningococcus in the throats of carriers has been studied especially by Mayer, Waldman, Furst, and Gruber,[1] who made repeated examinations of 96 carriers. According to the persistence of the meningococci, carriers are classified by them as follows:

1. Periodic (periodisch), in whom repeated examinations showed alternating periods of freedom from meningococci, and reappearances.
2. Persistent (zeitlich) in whom the meningococci were constantly demonstrable for several weeks or months.
3. Temporary (vorübergehend), in whom meningococci were found only for short periods.

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[1] Münch. med. Wochenschr, 1910, vol. 57, pp. 1584.

The relative frequency of the carriers of these three classes was determined as follows in the 96 persons studied:

1. Periodic carriers		6= 6.25 per cent.
2. Persistent carriers		12=12.50 per cent.
3. Temporary carriers:		
(a) 3 examinations positive	12	
(b) 2 examinations positive	16	
(c) Only 1 examination positive	50	
	——	78=81.25 per cent.

In healthy carriers, as in persons ill with meningitis, it would appear that the meningococci commonly persist for only a short period, but in exceptional instances may persist for periods of many weeks.

3. *Occurrence and viability of the meningococcus outside the human body.*—As above stated, the meningococcus has seldom been isolated except from the tissues and secretions of persons suffering from meningitis, and secretions of persons more or less intimately associated with such patients. Mayer, Waldmann, Furst, and Gruber, however, believe that, like the pneumococcus, the meningococcus is almost ubiquitous in man.

All the evidence available indicates that the life of the meningococcus outside the human body is short. It is a very delicate organism, readily killed by the chemical disinfectants in common use, by a temperature of 50° C. in five minutes, and at 65° C. within three minutes. Cultures on solid media are killed in a few hours by sunlight, and even when protected from the sunlight die out rapidly at room temperature, especially if the medium becomes somewhat dried out by evaporation.

It is quite probable that the organism may live longer in particles of sputum or pus, but judging from the difficulty of isolating the organism from exudates or secretions when the examination of the specimens is delayed 24 hours or more, it would seem that even in these media the meningococcus dies out quickly.

Altogether, it appears to be so fragile an organism outside of its natural habitat (the human body) that its persistence in the dust of house, in fomites, etc., is in all probability very short.

EPIDEMIOLOGY.

The accumulated records of thousands of sporadic and epidemic cases of cerebrospinal menigitis warrant some generalizations as to the epidemiological characteristics of the disease.

Geographic distribution.—The area over which the disease has prevailed is not definitely limited. Epidemics have occurred practically all over the world under the most various conditions as regards climate, topography, commercial relations, and social conditions. Yet certain areas seem to be especially liable to epidemics, as the northeastern United States, France, and Germany.

As previously pointed out epidemics come in cycles. Periods of widespread epidemics or pandemics alternate with periods of comparative freedom from outbreaks. It has usually been impossible in periods of widespread epidemics to trace the progress of the infection in such a way as to show any definite spread from one locality to another. Epidemics are apt to appear simultaneously in widely separated communities not in close communication, often sparing intervening points to which the spread of infection would seem most probable. Instances are cited, however, in which the infection has apparently been spread from place to place along the routes of travel, the most striking instances of this being in connection with the movements of troops from infected to previously uninfected places.

Sporadic cases and small outbreaks continue, in the periods of decreased epidemic prevalence, to occur perennially and almost ubiquitously though with great rarity as compared with the more common infectious diseases.

Seasonal prevalence.—It has long been noted that the disease is most prevalent in the spring and late winter, epidemics usually declining with the advent of summer.

Netter and Debré give the following statistics as to the seasonal prevalence of the disease in Germany from 1905 to 1908:

	Number of cases.				Per cent of total.
	1905	1906	1907	1908	
March, April, May	2,545	1,031	1,254	609	61
June, July, August	535	258	577	199	14.8
September, October, November	151	160	286	125	6
December, January, February	531	580	466	353	18.2

Approximately 80 per cent of these cases are seen to have occurred during the winter and spring months.

The seasonal prevalence is strikingly similar to that of pneumonia and influenza, and not unlike that of a number of other diseases (scarlet fever, measles, diphtheria, smallpox) in which the primary seat of infection is believed to be the respiratory tract, and which are supposed to be spread by contact.

Incidence among the population of a community.—Even in severe epidemics the total number of cases in a community is usually small in proportion to population, especially where one considers large populations, as in big cities or whole States. Netter and Debré cite the following figures, showing the incidence of cases in proportion to population in several epidemics:

New York, 1872	8.07 cases per 10,000
New York, 1905	6.30 cases per 10,000
Glasgow, 1907	8.47 cases per 10,000
Paris, 1909	Less than 1 case per 0,000

In small towns the morbidity rate has been higher, as in—

Lippisch (near Dantzig)	1,250 per 10,000
Aigues-Mortes, 1841	533 per 10,000

These latter are exceptional instances. In general the disease may not be expected to attack more than 1 to 2 per 1,000 of population during an outbreak in a city.

Even during an epidemic the cases in a city are characteristically scattered; sometimes grouped around several foci, but not commonly showing a definite grouping around or progress from a single focus.

In its incidence in the population of a community cerebrospinal meningitis is selective, attacking children much more frequently than adults. Among adults, the disease has often been more prevalent in military garrisons than in the civil population. The relative proportion of children and adults attacked varies greatly in different epidemics. In general not less than 75 per cent of cases are in children under 15 years of age.

The disease is generally more prevalent in the crowded districts of cities among the poorer classes, living under unhygienic conditions, but it is by no means limited to these.

Neither in its general nor its local distribution does it show any constant relation to elevation, moisture, or bodies of water.

Local causes of epidemics.—The local causes of epidemics have usually been sought in vain. Epidemiologic studies have usually excluded the probability of the infection having been spread through water supplies, milk, or other generally distributed foods.

Contagiousness.—Cerebrospinal meningitis does not present the epidemiologic characteristics which we are accustomed to associate with a contagious disease.

Even in carefully studied epidemics it is the exception rather than the rule to find any direct or even traceable indirect contact between successive cases. Again, it is unusual to find more than one case of the disease in a family; and when multiple cases do occur in the same house, they often occur so close together or separated by such a long interval as to make it seem unlikely that one was infected from the other. The comparative rarity of cases among the members of patients' families and among physicians and hospital attendants makes it seem quite certain that the disease is not highly contagious. The lack of traceable relation between cases renders it virtually certain that direct contact with the sick is neither a necessary nor even a very common factor in contracting the infection. And yet instances of apparent infection by direct contact with patients have occurred just often enough to keep alive the suspicion that the disease may be transmitted in that way.

SOURCES AND ROUTES OF INFECTION.

The impossibility of tracing epidemics to definite sources by the most careful epidemiologic studies has invested this disease with a veil of mystery, which has only recently been drawn by investigators who have conducted the most thorough intensive studies, combining bacteriologic and epidemiologic methods. With the data supplied by them we are now in a position to draw at least reasonable inferences, if not definite conclusions, as to the mode of transmission of this disease.

1. Cerebrospinal meningitis is due to the meningococcus, as evidenced by the almost constant association of this organism with cases of the disease. Failures to demonstrate the meningococcus in well-authenticated cases are not more common than would be expected in view of the technical difficulties.

2. The natural habitat of the meningococcus is the human body. There is no record of its ever having been isolated from any other natural source. All the facts known of its biology indicate that in nature the conditions necessary for its multiplication are encountered only in the human body, and that its life outside this habitat is very short.

3. Man, being the only known natural host of the meningococcus, is therefore the only known source of infection. The sources of infec-

tion may be divided into two classes: (*a*) Persons suffering with clinically recognizable manifestations of cerebrospinal meningitis; and (*b*) persons not suffering from any illness clinically recognizable as this disease. In the former, that is in persons suffering from meningitis, the meningococcus has been shown to be present in the nasopharyngeal secretions (very commonly during the early stages of the disease, progressively less frequently, later), in the blood at times, and in the cerebrospinal exudate.

In the latter class, that is in the so-called "meningococcus carriers," the organisms are found only in the nasopharynx, where they persist for a variable period.

From patients suffering with meningitis and from "meningococcus carriers" the organisms are eliminated in the nasopharyngeal secretions.

The sick and the well carriers of meningococci are found closely associated. So far as the recorded studies show—and they include thousands of persons—they indicate that the number of cases of meningitis and that of carriers in a community bear a fairly definite ratio to each other.[1] While it is impossible to give a numerical statement of the relative number of cases of meningitis and of "carriers," Flugge's estimate that the carriers are probably ten times as numerous as the recognized cases seems conservative.

Since apparently healthy carriers are in all probability much more numerous than recognized cases of meningitis, and have at the same time much more freedom of movement and consequent opportunity to mingle with other people, they would seem to be of much more importance in the distribution of the meningococcus.

In this connection it is of course natural to question whether the meningococci eliminated by healthy carriers are equal in virulence to those eliminated by persons actually sick with meningitis. While it seems not improbable that in some cases (perhaps most likely with chronic carriers) the organisms eliminated by carriers may be of less virulence, on the whole, it is more logical to infer that no such difference exists, at least during an epidemic.

4. The primary seat of attack, the first site of multiplication of the meningococcus in the human body, is believed to be the nasopharynx. This is inferred because of (*a*) the common occurrence of the meningococci in this location in the early stages of the disease, sometimes even prior to the development of meningitic symptoms, and (*b*) because in many cases (carriers) the demonstrable occurrence of the organism in the body is limited to this site.

5. The meningococcus would appear to be transmitted from its sources (infected persons) to other persons by such contact as ordinarily takes place between people associated together—the transfer of secretions by kissing, by the use of common eating or drinking utensils, the use of the same handkerchiefs and towels, the soiling of hands in handshaking, the contamination of food by fingers soiled with secretions, etc. The apparently short viability of the meningococcus outside the human body, leads to the inference that the contact is usually direct—that not much time elapses between the elimination and the reception of the infective material.

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[1] The researches of Mayer, Waldmann, Furst, and Gruber rather contradict this statement, to the extent of showing that in various barracks in Munich the carriers were not proportionate to the number of cases of meningitis within the past three years.

6. The factors which determine whether the meningococcus, once lodged and multiplying in the nasopharynx shall cause a general infection and involvement of the meninges or shall remain localized in the pharynx are to a large extent indeterminate. Variations in virulence of the meningococcus do not seem to furnish an adequate explanation, since cases of severe meningitis and carriers showing no morbid symptoms are found side by side, to all appearances infected with the same organism. It seems more likely that variations in individual resistance to the action of the meningococcus are a very important factor. The majority of persons are apparently not readily susceptible to general (meningeal) infection with the meningococcus. Some predisposition seems necessary, but just what constitutes predisposition to meningitis is undetermined, except in a very broad general way. The preponderance of the disease among children is best explained by assuming that children are more susceptible than adults. Its seasonal prevalence suggests that susceptibility is greater in the winter and spring months. The previous condition of the general health, trauma, and exposure seem not to be factors of any constant importance.

7. Just why the disease should suddenly become widespread in epidemics after years of comparatively rare occurrence in isolated sporadic cases is by no means clear. This tendency to recur in "cycles" of pandemics is, however, not peculiar to cerebrospinal meningitis. Influenza exhibits the same tendency quite strikingly. On a smaller scale, other diseases also exhibit alternating periods of epidemic prevalence and relative rarity. For example, a study of the incidence of measles in Richmond, Va., showed such regularity in the cycles of epidemics that the health officer was able to predict an epidemic before it actually occurred.[1]

It is likewise impossible to analyze the local conditions which determine the occurrence of an epidemic in one community while other communities, offering to all appearances equally good chances for the spread of the disease, remain free from it. But again, this element of mystery is by no means peculiar to cerebrospinal meningitis. The same problem is encountered in the epidemiology of other diseases.

SERUM THERAPY.

The use of antimeningococcic serum in the treatment of this disease may now be considered to have passed beyond the experimental stage and to have been established as a therapeutic measure of such well-proven efficacy that its use becomes imperative. Now that the serum may be obtained readily upon the markets in this country, it becomes the duty of those who undertake to treat cerebrospinal meningitis to inform themselves as to the principles and methods involved in this therapy.

The review of this phase of the subject has been drawn almost entirely from the monograph of Netter and Debré, previously cited, and from a recent extensive treatise by Levy.[2] The necessity of condensing these articles is regretted, and a careful study of them in the original is recommended to all to whom they are available.

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[1] Levy, E. C., Annual Report of the Health Department of the city of Richmond, Va., for the year 1910. Richmond, Va., 1911.

[2] Levy, Ernst, Serumbehandlung der uebertragbaren Genickstarre, Klinisches Jahrbuch, Jena, 1911, bd. XXV, pp. 121-272.

Antimeningococcic serum is obtained from horses immunized against the meningococcus by repeated, long-continued injections of live cultures, of killed cultures, or the disintegration products (autolysates) of cultures. In its therapeutic action this serum differs essentially from antidiphtheritic and antitetanic serums. The latter are antitoxic; their chief action is the neutralization within the body of soluble toxins (poisons) formed by the bacilli of diphtheria and tetanus. The action of antimeningococcic serum, on the other hand, is directed chiefly toward the destruction of the organisms themselves. .(1) This serum is bacteriolytic; in the body, and under suitable conditions in vitro, it kills and dissolves the meningococci. (2) It is opsonic; that is, it in some way facilitates the destruction of the meningococci by the phagocytic cells of the body. (3) It is to some extent antitoxic. While the meningococcus does not produce a soluble toxin similar to that produced by the diphtheria and tetanus bacilli, it contains so-called endotoxins, poisons within the bodies of the meningococci, set free when the latter are destroyed by bacteriolytic or phagocytic action. It is these endotoxins, liberated by the destruction of meningococci within the body, and exerting a toxic influence upon the system, which are neutralized by the antitoxin present in antimeningococcic serum.

The action of this serum then is, first, to destroy the meningococci by bacteriolysis and phagocytosis, and, second, to neutralize the poisons resulting from their disintegration. These processes are similar to those by which the human body itself combats the meningococcus infection.

Since the serum exerts its action chiefly upon the meningococci themselves, it is essential that it should be brought into actual contact with them. This can be accomplished efficiently only by introducing it directly into the subarachnoid space, by injection into the spinal canal, or occasionally into the ventricles of the brain.

TECHNIQUE OF ADMINISTERING SERUM.

1. *Lumbar puncture.*—The first step in the administration of serum is "lumbar puncture," the passage of a needle into the spinal canal in the lumbar region. The needle employed for this purpose is preferably one made especially for the purpose, a fairly thick, stout, hollow needle, provided with an obturator to prevent stoppage and to strengthen the needle during its passage into the canal. A convenient needle, already sterilized, is furnished with each package of antimeningococcic serum as commercially supplied in this country.

As the procedure is not extremely painful, it is best performed, wherever possible, without general anesthesia. The question of employing an anesthetic must, however, be left largely to the discretion of the operator. In patients with marked opisthotonos, especially when restless or violently delirious, it is frequently better to employ a general anesthetic than to run the risk of failure or accident by attempting to proceed without one.

Rigid asepsis is absolutely essential to success. The same care should be used in cleansing the area of operation, the hands of the operators, instruments, etc., as would be employed in an aseptic laparotomy.

If the operation is done without anesthetic, there should be a sufficient number of attendants to keep the patient quite still. If done under general anesthesia, there should be at least two persons besides the anesthetist.

The patient is laid upon the side with the back bowed. The puncture may be in the second, third, or fourth lumbar interspace. The site may be conveniently located as follows: Draw a line across the back, joining the highest points of the iliac crests. This line passes between the spinous processes of the fourth and fifth lumbar vertebræ, which, having been thus located, should be verified by counting. The puncture may be made midway between these processes, one-fourth to one-half inch from the mid line, the needle being directed forward, very slightly upward, and a little inward, so as to reach the dural sac just a little to the side of the median line, avoiding the veins located there.

If the needle is properly directed, its entry into the dural sac will be readily perceived by the sudden cessation of resistance. If it is improperly directed and impinges upon the bone, it should be withdrawn and redirected after a careful review of the landmarks. The distance to which the needle must be passed to reach the dural sac varies according to the age and musculature of the patient. In children it will be about 2 centimeters (three-fourths to 1 inch). In adults it may be as much as 4 to 6 centimeters (1½ to 2½ inches).

When the needle is in place the obturator should be removed and the fluid which flows from the needle be received directly into a sterile flask or large test tube, so marked as to indicate at least approximately the amount (in cubic centimeters) of fluid withdrawn. It is important to know the amount of fluid withdrawn, as it has a bearing upon the amount of serum which may be safely injected. It is also important to have the fluid in a clean glass vessel where its gross appearance may be immediately noted, and in which it may be kept for bacteriological examination.

Ordinarily the fluid may be expected to flow freely in a stream under pressure. It should be withdrawn until the pressure is relieved and it flows only by drops. The amount withdrawn may vary considerably, from 10 to 150 c. c. or more. When possible a quantity equal at least to the amount of serum to be injected (30 to 60 c.c.) should be withdrawn; a larger amount if the pressure is high and the flow free. The fluid is characteristically turbid in cerebrospinal meningitis, sometimes purulent with flakes of fibrin.

Sometimes when a puncture seems to have been successful no fluid comes from the needle. In such cases the needle should be cautiously manipulated—the needle cleared thoroughly with the obturator, then pushed cautiously in a little farther or withdrawn slightly. After the fluid has started to flow it may cease because of the needle becoming clogged. The needle should therefore be thoroughly cleared with the obturator before the operator allows himself to be satisfied that the pressure of the fluid is sufficiently reduced. In some cases it may happen that no fluid at all is obtained, as when the case is more chronic and the meningeal exudate thick and fibrinous.

Injection of the serum.—When a sufficient amount of fluid has been withdrawn the serum is injected through the same needle. The serum furnished by American manufacturers is put up in syringes which may be connected aseptically with the puncture-needle supplied. If the serum is not supplied in these syringes it should be drawn up from its receptacle into a carefully sterilized large syringe, previously tested with care to insure effective smooth working.

The serum should be injected very slowly, while the condition of the patient is carefully watched by an assistant. The amount to be injected depends upon several considerations. A child should receive ordinarily about 15 c. c. to 30 c. c., an adult from 30 c. c. to 60 c. c., at the first injection. These amounts may ordinarily be introduced with little fear or difficulty if the amount of fluid withdrawn is equal to or greater than this. Quite often, however, the amount of fluid obtainable is less than the amount of serum which it is desirable to administer. In such cases one must carefully note the resistance offered to the injection, must avoid undue pressure, and must watch closely for untoward symptoms, but in their absence need not be deterred from administering the full dose.

Course of treatment.—Antimeningococcic serum has not as yet been standardized with an accuracy comparable to that used in the standardization of antidiphtheritic serum. Greater variations are therefore to be expected in the potency of different samples. Also its action differs essentially from that of the purely antitoxic sera; hence in its administration one must be guided by somewhat different considerations, must be guided to a greater extent by results rather than by dosage.

Experience has shown that the best results can be obtained only by repeated injections. Although surprising results are often obtained from a single injection, unless the destruction of the meningococci is complete relapse is likely to recur. It is therefore recommended by Netter and Debré as a routine procedure to give at least three or four injections of full doses of serum at intervals of 24 hours, and after that to be guided by the clinical signs and changes in the cerebrospinal fluid. Ordinarily after three or four daily injections the fever will have fallen, the rigidity be relaxed, and the mental condition of the patient markedly improved. Since, however, these signs do not necessarily indicate complete recovery, it is highly important to make observations at each injection upon the cerebrospinal fluid and to be guided largely by its appearance. Under the influence of the serum the cerebrospinal fluid becomes clearer, the large adventitial cells diminish, the leucocytes are relatively increased and less degenerated, lymphocytes to some extent replace the polymorphonuclear leucocytes, the number of meningococci present in the fluid is diminished, and those that remain are found to be degenerated. Under favorably progressing treatment the meningococci disappear completely after from one to four injections. Levy gives the following figures as to the disappearance of meningococci in the cerebrospinal fluid. Meningococci could no longer be demonstrated:

> In 18 cases after a single injection; in 33 cases after 2 injections; in 35 cases after 3 injections; in 14 cases after 4 injections; in 9 cases after 5 injections; in 4 cases after 6 injections; in 1 case after 11 injections.

While these results illustrate the remarkable action of the serum in destroying the meningococci, they also show the necessity of repeating the injections as recommended and of being guided by the examination of the cerebrospinal fluid in continuing injections after the third or fourth.

Too much emphasis can not be laid upon the point that the treatment of cerebrospir [illegible] t be vigorous, with full doses, continued until a cure is effected. A large part of the failures to get satisfactory results have been from ignorance or neglect of this important point, from the tendency to let well enough alone, and to wait for the full effect of each dose before following it up with another.

It may happen that the inflammatory process may be largely localized in the ventricles of the brain, and the communication between these and the spinal subarachnoid space obliterated. In such cases severe symptoms will continue even after the cerebrospinal fluid appears free from meningococci, and intraspinal injections will be ineffective. It is advisable in these cases to make the injections directly into the ventricles of the brain, bilaterally if necessary. The indications for this procedure are prolonged subacute or chronic course of the disease, with the signs of acute hydrocephalus, viz, intensified stupor, headache, cerebral vomiting, slowing and irregularity of the pulse, "choked disc," and the failure of intraspinal injections to relieve the conditions. The procedure itself is a surgical operation, which can not be described here.

Indications for the use of antimeningococcic serum.—Antimeningococcic serum should be used in every case of cerebrospinal meningitis. The chances of recovery, other things being equal, are proportional to the promptness of its use; the delay of a day, sometimes of a few hours, may seriously affect the patient's chances for recovery. It is therefore vital to make at least a provisional diagnosis as early as possible. From the clinical signs it is often impossible to make an early distinction between cerebrospinal meningitis and meningitis due to infection with other organisms; such a distinction can be made only by bacteriological examination of the cerebrospinal fluid. Lumbar puncture should therefore be made upon the first suspicion that the case may be one of cerebrospinal meningitis. Rather than suffer the delay incident to a bacteriological report, the physician should be prepared to make the first injection of serum at the same time as the diagnostic lumbar puncture. If the fluid obtained is turbid, it indicates an acute inflammatory process due to bacterial infection. Without waiting to determine whether the infection is due to the meningococcus or to the pneumococcus or some other bacterium, the first injection should be made at once, especially if the prevalence of an epidemic strengthens the suspicion of cerebrospinal meningitis. The serum will be of benefit only in case the infection is due to the meningococcus; but the danger attending a useless injection of serum in a case of meningitis due to another cause is slight as compared to the danger of delaying its administration in a case of meningococcus infection. The fluid should then be examined by a competent bacteriologist, and if Gram-positive cocci are found (pneumococcus, streptococcus) no further injections need be made. If Gram-negative cocci are found, treatment should be continued. If the appearance of the fluid indicates an acute inflammation of the meninges, such as expected in cerebrospinal meningitis, and the clinical picture warrants that diagnosis, treatment should be continued even where no organisms are found. But in such cases the examination of the fluid should be most careful and repeated at each injection.

If, however, the cerebrospinal fluid is clear and does not show the characteristic cellular elements, the diagnosis of cerebrospinal meningitis is not probable.

Untoward results from the administration of serum.—More or less unpleasant, sometimes alarming, and occasionally serious consequences result from the administration of serum by intraspinal injection. These results are due to various causes: The pressure of the serum in the canal, the local action of the serum in destroying meningococci, and the toxic action of a foreign serum upon the human body.

The injection of serum may cause immediate painful sensations in the lumbar region and in the lower limbs, sometimes with vesical and rectal tenesmus, and considerable agitation of the patient. Netter and Debré recommend the administration of morphine when needed to quiet the patient in such circumstances. Sometimes a more alarming train of symptoms may occur during the administration of the serum; the patient may suddenly pass into syncope and collapse, becoming pale and limp, with feeble pulse and respiration. In the more serious cases the respiration becomes irregular, then ceases, the heart stops, the patient becomes cyanotic and comatose, with convulsive movements of the face or limbs, and occasionally dies suddenly. Sometimes, though rarely, the patient remains in a state of coma for several hours, then dies. Usually, however, even when the collapse is very alarming the patient may be restored by prompt measures.

It is recommended that at the first signs of collapse the injection be stopped, and if the serum injected has caused a high pressure some of it may be allowed to escape through the needle. Artificial respiration, heart massage, lowering of the head, and immediate stimulation are to be used when indicated, as in collapse under a general anesthetic.

The cause of these sudden symptoms is not clearly understood. Probably they are due to several causes—too sudden or too great change of pressure, sudden liberation of toxins by the destruction of meningococci within the spinal canal, hypersusceptibility to horse serum.

It is stated by Levy that patients who exhibit alarming collapse at the first injection of serum may bear subsequent injections well. Levy noted collapse in 16 of 160 patients treated. Of these two failed to rally; five others died later during the course of the disease. Levy intimates that severe collapse is more apt to occur in very severe than in milder infections; that serious accidents are most likely to occur in the cases which would most probably have died without erum treatment.

Later symptoms, which may be expected in some cases from the
ministration of serum, are: Irregularity of the pulse, restlessness,
ching, headache, pains in the back and lower limbs. These symp-
s, which may follow shortly after the injection, are usually of a
duration only and seldom alarming.

quently the injection of serum may be followed within a
a rise of temperature which may be considerable, and
mpanied by an exaggeration of meningitic symptoms.
to Levy's view, is due to the action of the serum in
meningococci and liberating consequently large
r endotoxin. The rise of temperature is more con-
vere following the first injection than after subse-

Still another, later train of symptoms attributable to the action of the serum may be expected, namely, the symptoms of so-called serum disease, which not uncommonly follows the administration of horse serum subcutaneously. This manifests itself most commonly from 8 to 14 days after the injections, giving rise to an elevation of temperature, and an urticarial eruption, sometimes accompanied by other symptoms suggestive of a relapse, viz: Pains in the limbs and joints, accentuated stiffness of the neck, headache, Kernig's sign.

If the clinical distinction can not be made between serum sickness and a relapse, lumbar puncture will usually differentiate. If a relapse is occurring the fluid will show meningococci; if the symptoms are due to the toxic action of the serum upon a recovered patient, the cerebrospinal fluid will be clear and free from meningococci.

According to Netter and Debré the amount of serum injected at a single dose or upon successive days has little influence upon the frequency or severity of such symptoms. Symptoms are apt to be more severe but not serious where the patient has previously received injections of horse serum, as in the treatment of diphtheria, and especially where a relapse renders it necessary to administer serum a week or more after the first injections.

These unpleasant and sometimes disquieting results from the administration of serum have been dwelt upon not to impress their gravity. As a matter of fact they are practically insignificant as compared to the disease itself, and are mentioned rather that they may be looked for, guarded against so far as compatible with vigorous treatment, and may not cause unnecessary alarm when encountered. The fear of them should not deter any one from using full, vigorous serum treatment in every case of cerebrospinal meningitis.

RESULTS OF SERUM THERAPY.

The following table, taken from Levy's treatise, presents succinctly some of the results accomplished by the use of antimeningococcic serum in reducing the mortality from cerebrospinal meningitis.

Since the disease is one in which the case mortality varies greatly in different epidemics, the results of serum treatment as shown in this table can best be appreciated by comparing in each instance the mortality of untreated cases in the same vicinity:

Reported by—	Cases treated with serum.		Cases treated without serum (percentage mortality).
	Number.	Percentage mortality.	
Flexner (collective)	712	31.4	70–80.0
Netter	100	28	49.0
Dopter	402	16.44	65.0
Schoene	30	25	53.0
Jehle, Weiss-Eder	64	42	70–85.0
Leick	34	32.4	66.0
Neglein	30	26.6	50.0
Kleinschmidt	21	19	[1] 62.47
Quenstedt	18	22.2	[2] 56.2
Levy	165	18.18	[3] 52.14

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[1] General mortality in Prussia, 1907.

[2] General mortality in Prussia, 1908.

[3] General mortality in Prussia, 1909.

The above table gives the gross mortality, including among the serum-treated cases a number of fatalities in patients moribund when treatment was commenced, a considerable number in whom the treatment was not sufficiently vigorously carried out, still others who died from complications such as pneumonia, tuberculosis, valvular heart disease, etc. Even including these cases the mortality as compared to cases in the same vicinity not treated with serum has commonly been reduced to one-half, not infrequently to one-third or one-fourth. It is abundantly proven that in cases treated early and vigorously the mortality may be expected to be reduced to even lower rates than those given above.

The importance of instituting serum treatment as early as possible in the course of the disease is illustrated by an analysis of the 712 cases reported by Flexner,[1] 99 cases reported by Netter and Debré from their own experience, and 402 cited by them as reported by Dopter.

Day of disease when treatment was begun.	Mortality, per cent.		
	Flexner's cases (712).	Dopter's cases (402).	Netter and Debré's cases (99).
First to third day	25.3	8.20	20.9
Fourth to seventh day	27.8	14.40	33.3
Later than seventh day	42.1	24.10	26.0
Average mortality	34.1	16.44	28.0

Of the 44 cases treated by Netter and Debré before the third day 9 died. Of these 9 fatalities 4 were in patients moribund when brought in for treatment, 3 others in patients who left the hospital apparently cured and were brought back after a considerable interval in a desperate state in relapse, another in a patient with cardiac lesions. Excluding the cases, in which the authors believe the serum treatment did not have a fair trial, there are left 36 cases with only 2 deaths, a mortality of only 5.55 per cent. These authors consider that recovery is the rule in patients in whom treatment is begun within the first three days of the disease.

The beneficial results of serum therapy in the treatment of cerebrospinal meningitis are not limited to the reduction in mortality. The use of the serum shortens the course of the disease, renders it less distressing, and among the patients who recover reduces the proportion of the most serious sequelæ, such as blindness, deafness, idiocy, and paralysis.

During the spring of 1911 the writer had the opportunity of studying an epidemic of cerebrospinal meningitis at Savannah, Ga., where antimeningococcic serum, prepared for the market by an American firm, was used by various physicians.

Full data concerning the treatment employed were obtained in 50 cases, of which 22 received more or less thorough serum treatment and 28 received no serum.

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[1] Flexner, Simon, The Present Status of the Serum Therapy of Epidemic Cerebrospinal Meningitis. Jour. Am. Med. Assn., 1909, vol. 53, pp. 1443-1446.

The mortality among the serum-treated cases was as follows:

Day of disease on which treatment was begun.	Number of cases.	Number of deaths.	Case mortality.
			Per cent.
First to third day	11	5	45.5
Fourth to seventh day	6	3	50.0
Later than seventh day	4	3	75.0
No serum given	28	16	57.0

Of 11 cases reported as having recovered after the administration of serum, 2 (18.8 per cent) had defects remaining; of 12 cases reported as having recovered without the administration of serum, 5 (41.6 per cent) had defects remaining.

Of the 5 cases which died in spite of serum therapy begun within the first three days, 1 was complicated with puerperal septicemia, 1 with whooping cough and pneumonia; 2 of the remaining cases received each only a single dose, and the fifth received repeated small doses.

These figures are of interest as showing the value of American commercial serum such as is readily available to all. When administered early and vigorously, the results were prompt and striking. The writer was, however, chiefly impressed in this epidemic with the extreme importance of having the treatment administered by physicians expert in the technique and well acquainted with the principles.

Summarizing the observations upon the use of antimeningococcic serum in the treatment of cerebrospinal meningitis, it has been agreed upon by those best qualified to judge—

(1) That the serum when promptly and properly used effects a very substantial reduction in mortality, shortens the course of the disease, and reduces the proportion of disastrous sequelæ.

(2) That it must be used freely—repeated daily for at least three days in most cases, and as much longer as may be found necessary from observation of clinical signs and examinations of cerebrospinal fluid.

(3) That the best results can be obtained only by persons expert in the technique and principles of the treatment and conversant with the clinical aspects of the disease.

PROPHYLAXIS.

If the inferences from the above facts are correctly drawn, it is obvious that the prevention of the spread of cerebrospinal meningitis is a matter of extreme practical difficulty. If, indeed, persons apparently in good health, carriers of the meningococcus, unrecognizable except by means of a difficult bacteriologic examination, are the most important source of the infection, it must be admitted that the sources of infection are largely uncontrollable by any means of general, practical application. If, as estimated by Fluegge, healthy carriers are ten times more numerous than recognized cases of meningitis, and because of their freer movements are more than ten times as prolific a source of infection for others, then the most that we can hope to accomplish by the isolation of every recognized case is a slight reduction, perhaps 10 per cent, in the dissemination of the infection. By complete isolation of all the associates of every recognized case more might perhaps be accomplished; but rigid quarantine is a serious economic matter, justified only by a reasonable hope of proportionate results; and considering that the most prompt and rigid isolation of all the immediate associates of every recognized case would still leave at large a very considerable number of carriers, the rigid quarantine of either houses or communities on account of cerebrospinal meningitis seems ordinarily unjustified. The chances are that by the time the first case in a community is recognized other foci of infection have already been established; that by the time an epidemic is recognized in one community, the infection has already been carried to other communities in close communication with the first.

To undertake to make bacteriological examinations sufficient to discover all the carriers in a community of any considerable size is obviously impracticable; if it were possible it would consume so much time that the infection would have ample opportunity to spread in the meantime. Moreover, the control of carriers when discovered would be practicable only under military rule or in institutions. The most recent bacteriologic studies, as well as past experience, indicate that cerebrospinal meningitis, when once it has become epidemic, is not controllable by any known means of practical application.

PUBLIC MEASURES FOR THE CONTROL OF CEREBROSPINAL MENINGITIS.

The high mortality of cerebrospinal meningitis, its peculiarly distressing clinical course, and the frequency of most serious after-effects render it imperative that every possible measure be taken to protect the public from its ravages. Public-health authorities, in their efforts to minimize the damage done by this disease may consider two lines of procedure (1) prevention of its spread, and (2) reduction of mortality and disability by providing facilities for the most advantageous treatment. Of these lines of procedure, prevention is undoubtedly preferable—if it can be accomplished—and at the same time more in line with the generally accepted views of the functions of public-health organizations. As stated above, however, even the most rigid preventive measures offer at best a very doubtful hope of materially reducing the prevalence of this disease. On the other hand, serum therapy, well administered, does offer the well-justified expectation of reducing the damage done to one-half or even one-fourth.

There are, moreover, special reasons why public-health authorities should take an active part in the serum therapy of cerebrospinal meningitis. The cost of the serum itself, while not great, is sufficient to render it unavailable to the very poor. Aside from the serum the proper treatment of a case is very expensive, requiring the daily and almost constant services of at least two physicians and skilled attendants. The best results require expert services which are not available in all communities; and the number of cases which can be treated at the same time by a single staff of experts is small unless the patients are concentrated in a hospital with adequate facilities. Finally, the diagnosis and the proper control of treatment require expert bacteriological services which are not available in many communities, and when available are very justly expensive.

It is believed that the most effective work which can be done by State and municipal health authorities toward controlling epidemics of this disease is along the lines of rendering assistance in its therapy. An outline of the measures suggested is presented.

1. To require prompt reports to the local authorities of all suspected cases of this disease.

2. To provide the best possible facilities for diagnosis, viz:

(*a*) An expert diagnostician, employed by the health authorities to visit suspected cases in consultation with the reporting physician.

(*b*) An expert bacteriologist, with a laboratory established in the immediate locality, to examine and report upon specimens of cebrospinal fluid.

3. To provide the best possible facilities for treatment, by employing the necessary staff of properly qualified physicians, with hospital facilities adequate for the treatment of all cases, and the requirement that all cases pronounced suspicious by the diagnostician be sent at once to the hospital for diagnostic lumbar puncture and treatment. The necessary serum and medical and hospital attendance should be provided free.

In many communities local men might be most advantageously employed to take charge of the diagnostic and therapeutic measures. The feasibility of such methods depends, of course, upon the support of public sentiment, and especially upon the cooperation of the practicing physicians, and the details in each community would need to be adjusted to suit the circumstances. It is believed, however, that with the modifications required by local conditions these measures can readily be carried out and will prove effective.

In spite of the apparently insuperable obstacles in the way of preventing the spread of the disease, such measures as are practical should be taken toward that end. Following is a brief outline of the measures suggested:

1. Reporting of all cases, on suspicion.

2. Isolation of patients and disinfection of nasopharyngeal discharges, as for diphtheria. The utmost cleanliness among all associates of the patient and the use of antiseptic gargles and nasal douches.

3. Such restriction as practicable of communication between the associates of the patient and others; placarding the house, exclusion of unnecessary visitors, exclusion of the children of the family from schools, and so far as possible confining to the house all members of the family who are not obliged to go out in pursuit of necessary business. Quarantine of the breadwinners on the assumption that they are carriers is of doubtful justification.

4. In the discretion of the health authorities it may be wise to close schools and prohibit public gatherings in a severe epidemic, especially if there is evidence that the epidemic is still localized in some part of the community, which is, however, seldom the case.

5. The public might well be advised, when the disease is prevalent in a community, to minimize their chances for contracting the infection by keeping away from large public gatherings, especially keeping their children away; by avoiding the use of public drinking

cups; and by exercising care as to the personal cleanliness of themselves and their children.

6. The administration of urotropin in moderate doses, under the supervision of a physician, may be suggested as a possible though quite unproven prophylactic.

Under some circumstances more rigid measures may be justified. For example, a localized outbreak of the infection in an institution, a military or industrial camp, or even a severe outbreak in a small town might justify quarantine of the whole aggregation associated with the cases, though it is highly improbable that the quarantine would prevent the spread of the infection.

It is to be remembered in this connection that by the time an epidemic is recognized in a locality the infection is probably widespread in the community; that even in the vicinity of rather rare sporadic cases a considerable proportion of carriers have been found; that a not inconsiderable proportion of infected persons remain carriers for a long time, and that finally quarantine has been in a good many instances thoroughly tried and found unavailing.

Even systematic search for carriers and their isolation is probably useless except in strictly localized outbreaks.

Where rigid quarantine has been tried and the disease has failed to spread from a recognized focus the conclusion is not justified that the quarantine has prevented the spread. It is to be remembered that the majority of cases give rise to no apparent, traceable secondary cases, that the disease often fails to spread under conditions that would seem most favorable for it, and characteristically appears where it is not expected

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

CLEVELAND, OHIO.

DRINKING CUPS AND DISHES USED IN PUBLIC PLACES AND IN HOTELS, RESTAURANTS, ETC.

SEC. 1. The use of public and common drinking cups, glasses, or vessels of any kind to be used in common, for the purpose of drinking therefrom on railroad trains or in stations, in public or private schools, public buildings, halls, churches, theaters, markets, playgrounds, parks, stores, hotels, offices and office buildings, factories or manufacturing establishments, or in any other public place whatsoever, in the city of Cleveland, is hereby prohibited.

SEC. 2. No person, partnership, or corporation in charge or control of any railroad train or station, or public or private school, public building, hall, church, theater, market, playground, park, store, hotel, office or office building, factory or manufacturing establishment, or in any other public place whatsoever, shall furnish, provide, place or expose, or allow to be furnished, provided, placed or exposed, any cup, glass, or any other drinking vessel at any place where the public or more than one particular individual may or can have access to or the use of such vessel, or where such vessels, may or can be used in common by the public or by more than one particular individual, on any railroad train or in any station, or public or private school, public building, hall, church, theater, market, playground, park, store, hotel, office and office building, factory or manufacturing establishment, or at any other place whatsoever, under his or its control in the city of Cleveland.

SEC. 3. The owner, lessee, or person in charge of any hotel, saloon, restaurant, drug store, soda fountain, or any place of public refreshment, shall furnish glasses, cups, dishes, and other eating or drinking vessels and utensils used in the said hotel, saloon, restaurant, drug store, soda fountains, or other places of public refreshment, to be thoroughly cleansed after use by each and every customer in a manner approved by the board of health.

SEC. 4. Any person violating any of the provisions of the above sections shall, upon conviction, be deemed guilty of a misdemeanor and punishable by a fine of not less than $10 or more than $25, and each day's failure to comply with any provision of the above sections shall constitute an additional and separate offense.

This resolution shall take effect and be in force from and after its adoption and legal publication. [Resolution board of health, adding Title VII to part 6 of Rules and Regulations of the board of health. Adopted Sept. 1, 1911.]

HARTFORD, CONN.

COMMUNICABLE DISEASES—NOTIFICATION, ISOLATION, PLACARDING, DISINFECTION.

REGULATION 1. Every physician shall report in writing to the board of health, within 12 hours after his recognition of the disease, every case of cholera, yellow fever, typhus fever, leprosy, smallpox, diphtheria (membranous croup), typhoid fever, scarlet fever, cerebrospinal fever, poliomyelitis, whooping cough, measles, or such other contagious or infectious disease as the board of health may designate.

REGULATION 2. Every householder in whose house any person shall be ill with any of the following diseases, to wit: Cholera, yellow fever, typhus fever, leprosy, smallpox, diphtheria (membranous croup), typhoid fever, scarlet fever, cerebrospinal fever, poliomyelitis, whooping cough, measles, or such other contagious or infectious disease as the board of health may designate, shall report the same to the board of health within 12 hours of his first gaining knowledge of such disease, provided no physician shall be in attendance.

REGULATION 3. Until permission has been received from the board of health, no clothing or other property that may have been exposed to the infection of cholera, typhus fever, leprosy, diphtheria (membranous croup), scarlet fever, smallpox, or such other malignant contagious diseases as the board of health may designate shall be removed from the house; neither shall any occupant of such infected dwelling change his residence, nor shall any public or circulating library or any schoolbook be taken into the house without the consent of said board of health.

REGULATION 4. Whoever is infected with smallpox, scarlet fever, diphtheria (membranous croup), or other malignant contagious disease requiring isolation to protect the public shall immediately proceed to some isolated place or room designated by the board of health, and remain there until permitted to remove by order of said board. Every parent or guardian of any child or ward infected with smallpox, scarlet fever, diphtheria, membranous croup, or other malignant contagious disease shall immediately cause such child or ward to be conveyed to some isolated place or room designated by the board of health, and no parent or guardian shall permit such child or ward to remove from such place or room until the board of health shall certify that all danger of communicating the disease is passed.

REGULATION 5. No person other than the attending physicians, nurses, and the agents of the board of health shall enter, and no dog, cat, or other animal shall be allowed to enter any apartment or place set apart for the treatment of smallpox, scarlet fever, diphtheria, or other malignant contagious disease without the consent of the board of health.

REGULATION 6. No person affected with smallpox, diphtheria, membranous croup, scarlet fever, whooping cough, or measles shall attend any public meeting or assembly or travel in any public conveyance.

REGULATION 7. Upon every house or apartment in which there is a case of diphtheria, including membranous croup, scarlet fever, or such other malignant contagious disease as the board of health may determine under quarantine, shall be placed a placard with the name of the disease. This placard shall not be defaced or removed by any person without the authority of the board of health.

REGULATION 8. No person having the care either as physician, parent, or attendant of any person who has been placed in isolation for a contagious disease shall advise or permit such other person to leave any place designated by the board of health as a place of quarantine before said board shall have certified that this can be done without danger to others.

REGULATION 9. It shall be the duty of any physician or person having charge of a case of contagious disease ordered into isolation by the board of health to report to said board as soon as the case is ready for dismissal.

Before the card placed upon a house or apartment in which there is a case of diphtheria or membranous croup on the restrictions placed on intercourse between the inmates of such house will be removed, a culture shall be taken from the throat of each patient surviving and a report received from the laboratory of the Hartford board of health or the State board of health that such culture does not show the presence of bacillus of diphtheria. And a second culture and report and cultures from persons in contact with the case may be required as the board of health may direct. The culture for release as above described shall be taken by the physician attending the case. Subsequent cultures may be taken by the medical inspector if desired. If an interval of four weeks has elapsed without securing a culture free from diphtheria bacilli and clinical signs of the disease are absent, the board of health will, upon request of the physician in attendance, take further cultures as may be necessary.

REGULATION 10. Placards posted on account of scarlet fever may be removed when desquamation has ceased and no abnormal discharges from the nose or throat are present. Cases in which no evident desquamation or unusual discharge exists will be kept under quarantine for three weeks and may be released after that date upon the approval of the board of health.

DISINFECTION REGULATION 11. It is to be remembered that direct sunlight and fresh air are powerful disinfectants, and that both of these should be admitted as freely as possible to all rooms in which patients are under treatment for contagious disease.

All washable clothing removed from contact with cases of smallpox, typhoid fever, scarlet fever, diphtheria, or such other diseases as the board of health may direct shall be disinfected by soaking for at least one hour in a 5 per cent solution of carbolic acid in water, a 1 to 1000 solution of corrosive sublimate in water, or by such other means as the board of health may direct before being removed from the room. Clothing or bed linen thus treated may then be washed and laundered in the usual way. Milk bottles are to be thoroughly washed in scalding water before being returned to the dealer.

Discharges from the nose and throat of patients suffering from diphtheria, consumption, scarlet fever, or such other diseases as the board of health may direct are preferably to be received in a paper sputum cup or on pieces of tissue paper or cloth, which should be at once placed in a paper bag and burned before they become dry; otherwise, they may be received in a receptacle containing one of the above-named disinfecting solutions, which should be emptied frequently.

All discharges from cases of typhoid fever should be disinfected by remaining in contact with at least a pint of a solution of 6 ounces of chlorinated lime to a gallon of water for at least one hour, after which the vessels may be emptied and cleansed.

Upon termination or removal of all cases of diphtheria, membraneous croup, scarlet fever, consumption, or such other diseases as the board of health may direct, the premises must be disinfected in a manner satisfactory to the board of health.

REGULATION 12. No superintendent, principal, or teacher in any school or any parent or guardian of any child attending school shall permit a child sick with smallpox, scarlet fever, diphtheria, membraneous croup, measles, German measles, consumption, chickenpox, mumps, itch, lice, favus, ringworm, contagious impetigo, or such other contagious diseases as the board of health may direct, to attend school, nor shall any child residing in any household in which such disease exists be allowed to attend school without a permit from the board of health. No person living in any single house or apartment upon which a card has been placed, as required in section 7, shall attend school without a written permit from the board of health and the superintendent of schools.

Children exposed to infection from diphtheria who have removed from the infected household may be admitted to school if cultures from the nose and throat do not show the germ of that disease. Those exposed to scarlet fever may be admitted if showing no unusual symptoms after an interval of 10 days from the last exposure.

Children sick with measles, German measles, mumps, or chickenpox shall be excluded from school for two weeks, and in chickenpox until all crusts are removed. Other children in the family who have not had the disease are excluded for two weeks from the appearance of the last case. Cases of whooping cough are excluded for a period of one month and until a period of three days have elapsed without a "whoop." Other children in the family are to be excluded if showing any signs of cough. Children who have had these diseases may be admitted if in the opinion of the medical inspector it is safe to do so. [Regulations board of health, approved Nov. 1, 1911.]

ST. JOSEPH, MO.

MILK—PRODUCTION, CARE, AND SALE.

Be it ordained by the common council of the city of St. Joseph as follows:

SEC. 1. Every person or firm selling milk or cream within the city of St. Joseph shall obtain from the board of health, on the 1st day of November of each year, a certificate of registration; such certificate to be nontransferable, and may be revoked for the violation of milk ordinances of the city of St. Joseph or any rule of the board of health. Also every person or firm who may desire to engage in the sale of milk or cream at any time shall obtain a certificate of registration, as above stated, before engaging in such business. Every person on making application for a certificate of registration shall be required to give his name and address and the location of his dairy and the number of cows in his herd from which the milk or cream is obtained; or, if such person is not a producer, but buys milk from another party, he shall give the name and address of the other party, together with the location of the dairy of such party, if any, and the number of cows in the herd. Said certificates shall be serially numbered, and every dealer shall have his certificate number legibly painted on both sides of each vehicle which is used by him in the delivery of milk or cream. When milk or cream is sold in any place of business the certificate itself shall be conspicuously posted. Any dealer desiring to change his supply of milk shall notify the board of health of his intention, and if such source of supply is found to be conducted in accordance with the provisions of the law, the dealer may make such change.

SEC. 2. Every person or firm controlling or having in possession any dairy or cows supplying milk or cream to anyone within the city of St. Joseph shall provide and maintain a suitable milk house for the purpose of cooling, mixing, storing, canning or bottling the same. Said milk house or room shall not be located in or be a part of any residence, dwelling house, or barn. Milk or cream shall not be cooled, stored, mixed, or kept in any room or place occupied by any person or persons for sleeping or living apartments, or occupied by horses, cows, or other animals or fowls of any kind. Cooling, bottling, mixing, or store rooms for milk or cream shall be used for no other purpose whatever. All rooms or houses in which milk or cream is cooled, stored, mixed, or bottled shall be provided with such walls as can be kept clean, and will exclude flies and other insects, and the floors of said rooms shall be made of such material as may be kept clean and sanitary. Furthermore, such walls and floors must be kept clean and sanitary at all times, and flies and other insects must be excluded from said room. All doors and windows in said rooms must be properly screened.

SEC. 3. All cans or other receptacles containing milk or cream, either on wagons or n places where same is offered for sale, shall be clean and in good condition.

SEC. 4. The collection of milk vessels, milk cans, or any other container used in the delivery of milk or cream from houses in which are located cases of any contagious disease is forbidden. Such vessels must be left at the house until they have been disinfected under the supervision of the board of health, after which they may be collected by the owner.

SEC. 5. No person, firm, or corporation engaged in the sale or the delivery of milk or cream shall use any milk checks, tickets, or coupons except aluminum, a second time in exchange for any milk or cream, and all tickets or coupons shall have the name and address of the person or firm selling such milk or cream plainly printed thereon, and such checks, tickets, or coupons should be numbered consecutively.

SEC. 6. Every wagon or other vehicle used in the sale or the delivery for sale of milk or cream shall have painted on both sides thereof, in a conspicuous manner and in legible Roman letters not less than five inches in height the name of the person, firm, or corporation owning or operating such vehicle.

SEC. 7. No milk or cream shall be sold, offered or exposed for sale within the city of St. Joseph which shall have been sterilized or pasteurized without the can, bottle, or other container being marked in plain Gothic letters with the word "sterilized" or "pasteurized."

SEC. 8. All milk or cream subjected to the process of pasteurization for sale within the city of St. Joseph shall be pasteurized in accordance with one of the following processes, so that said milk or cream will have been heated below boiling but sufficiently to kill most of the active organisms present:

A uniform heating at 140° maintained for 20 minutes.
150° F. maintained for 15 minutes.
155° F. maintained for 5 minutes.
160° F. maintained for 1½ minutes.
165° F. maintained for 1 minute.

This time shall be calculated from the period the entire quantity reaches the required temperature. The pasteurized product shall be cooled at once to a temperature of 5° F. or lower. This cooling shall be so conducted that the pasteurized product is not exposed to the air or other contamination. The apparatus shall be so constructed that it can readily be cleaned and sterilized.

SEC. 9. No milk or cream shall be sold, offered or exposed or kept with the intention of selling the same within the city of St. Joseph after November 1, 1911, unless such milk or cream shall have been obtained from cows that have given a satisfactory tuberculin test within one year from the date of such sale, or offer for sale, of such milk or cream. All cows that have been satisfactorily tested and that have given a negative reaction shall be marked "tuberculin tested" in a manner satisfactory to the board of health, and shall be numbered, and a certificate shall be filed with the health department of the city of St. Joseph by the person making such test upon forms furnished by the said health department, giving the number of the animal, the date of taking said test, name of the owner and the result of the test made, together with a brief description of the animal tested, said certificate shall be signed by the person making such test. All tests so made shall be by the State veterinarian or his duly authorized deputy.

SEC. 10. It shall be unlawful for any milkman, dairyman, veterinarian or any other person except the State veterinarian or one of his assistants or a United States veterinarian working under the direction of the State veterinarian or the United States Government, to test by using in the eyes or injecting any tuberculin or any product of tuberculin into any milk cow or cows, the milk of which is sold or offered for sale within the city of St. Joseph.

SEC. 11. Any person, firm, or corporation having milk in his or its possession and offering the same for sale the temperature of which is higher than 60° F., the milk inspector or other officer of the board of health who shall be authorized by the board of health to inspect the same may add aniline to such milk to change its color so as to make it unsalable for domestic purposes and not make it unfit for other purposes.

SEC. 12. Whenever the word "milk" or term "milk or cream" are used in this ordinance it shall be construed to include milk, cream, skim milk, and milk modified in any form, but nothing in the ordinance shall be so construed as to prohibit the sale of sour milk, or what is known as buttermilk, provided the same is sold as such and is produced from pure and wholesome milk.

SEC. 13. No milk sold, kept, or offered for sale within the city of St. Joseph shall contain more than 300,000 bacteria per cubic centimeter.

SEC. 14. The following rules shall be complied with:

RULE 1. Barn must not leak, must have tight floor with well-drained gutter, and have a sufficient number of windows for proper light and ventilation.

RULE 2. Barn must be thoroughly cleaned at least once a day, and manure must be removed not less than 25 feet from barn.

RULE 3. Feed troughs and mangers must be kept clean and sanitary at all times.

RULE 4. Cows must be supplied with clean, fresh well, spring, or hydrant water, and the watering troughs must be kept clean and sanitary.

RULE 5. Barn must be whitewashed on inside at least once a year.

RULE 6. The udders and the surrounding parts must be wiped with a clean damp cloth immediately before milking, and milking must be done with dry hands. Tobacco should not be used while milking.

RULE 8. Milk must be strained in milkhouse through four thicknesses of clean, recently sterilized cloths, free from holes.

RULE 9. All cans, bottles, and other utensils must be thoroughly cleaned with salsoda, soap, or any reliable cleansing powder, after which they must be thoroughly sterilized with boiling water or live steam and placed in an inverted position in pure air to drain.

RULE 10. All milk must be cooled to a temperature of 60° F., or lower, immediately after milking, and kept at such temperature until delivered to the customer.

RULE 11. The United States Government score-card system shall be used in scoring all dairies, and any person whose dairy scores lower than 40 shall be notified and given 30 days in which to make necessary improvements, at the end of which time, if such improvements shall not have been made, the sale of all milk or cream from such dairy shall be prohibited within the city and the certificate of such person shall be revoked.

RULE 12. All milk wagons, ice chests, or ice containers therein must be kept at all times clean and free from all odor, and it is hereby declared unlawful for any garbage or refuse of any form or kind to be allowed on any milk wagon.

SEC. 15. No provisions of this ordinance except sections 4 and 5 shall apply to any resident of the city of St. Joseph who may sell milk or cream from not to exceed 2 cows: *Provided*, That that portion of section 9 which pertains to the tuberculin test shall apply to all dealers.

SEC. 16. All ordinances or parts of ordinances in conflict herewith are hereby repealed and any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than $10 and not more than $50. [Ordinance adopted Sept. 13, 1911.]

SAN FRANCISCO, CAL.

RAGS AND CAST-OFF CLOTHING—USE OF AS WIPING RAGS.

SEC. 1. It shall be unlawful for any person, firm, or corporation to sell or offer for sale soiled cloths or rags, or soiled or disused or cast-off underclothing, garments, bedding, bedclothes or parts thereof, for use as wiping rags, unless the same have been cleansed and sterilized by a process of boiling continuously for a period of 40 minutes in a solution containing at least 5 per cent of caustic soda.

SEC. 2. It shall be unlawful for any person, firm, or corporation employing mechanics, workmen, or laborers, to furnish or supply such employees for use as wiping rags, soiled cloths or rags, or soiled or disused or cast-off underclothing, garments, bedclothes, bedding or parts thereof, unless the same have been cleansed and sterilized in the manner herein prescribed.

SEC. 3. Wiping rags within the meaning of this ordinance are cloths and rags used for wiping and cleaning the surfaces of machinery, machines, tools, locomotives, engines, motor cars, automobiles, cars, carriages, windows, furniture, and surfaces of articles, in factories, shops, steamships, and steamboats, and generally in industrial employments; and also used by mechanics and workmen for wiping from their hands and bodies soil incident to their employment.

SEC. 4. It shall be unlawful for any person, firm, or corporation to establish or maintain a laundry for cleaning or sterilizing wiping rags or soiled cloths or rags or soiled and disused or cast-off clothing, garments, underclothing, bedclothes, bedding, or parts thereof, within the limits of the city and county of San Francisco, without having first complied with the ordinances of the said city and county regulating the conducting of public laundries and obtain a permit therefor as required by section 12 of this ordinance.

Sec. 5. No charge whatever shall be made, or compensation or fee collected or received for the performance of any services required by the provisions of this ordinance, or the issuance of certificates or permits, but all such services shall be performed free of charge.

Sec. 6. All soiled cloths and rags and soiled and disused and cast-off underclothing, garments, bedclothes, bedding and parts thereof, before being offered for sale, or sold or furnished for use as wiping rags must be subjected to a process of sterilizing approved by the board of health of the city and county of San Francisco, including the process of boiling for a period of 40 minutes in a solution of caustic soda mentioned in section 1. Before washing, all sleeves, legs, and bodies of garments must be ripped and opened and all garments made into flat pieces.

Sec. 7. It shall be unlawful for any person, firm, or corporation to wash, cleanse, sterilize, or dry disused or castoff clothing, garments, underclothing, bedclothes, bedding or parts thereof, or soiled cloths or rags in the same building or by the same machines or appliances by which clothing, bedding, or other articles for personal or household use are laundered.

Sec. 8. Each package or parcel of wiping rags must before being sold be plainly marked "Sterilized wiping rags," with the number and date of the certificate given by the health officer of the said city and county for the conducting of a laundry in which the rags contained in such package or parcel were cleansed and sterilized or with the name and location of the laundry in which said rags were cleansed and sterilized.

Sec. 9. Wiping rags imported into this city and county from other cities, counties, or States shall not be used, sold, or offered for sale, unless they have been cleansed and sterilized as required by this ordinance, or unless such imported rags are inspected by the health officer and a certificate given by him that such rags have been inspected and cleansed and sterilized as required by this ordinance.

Sec. 10. The health officer shall inspect all wiping rags and give a certificate to that effect when the rags inspected have been cleansed and sterilized as required by this ordinance. Such certificate shall also state the date of inspection, the quantity and number of parcels inspected, the name of the owner, and the place where the wiping rags were cleansed and sterilized.

Sec. 11. All persons having wiping rags in their possession for sale or for use shall, upon demand of any officer of the department of public health or any police officer, exhibit such wiping rags for inspection and give all information as to where and from whom said wiping rags were obtained.

Sec. 12. No person, firm, or corporation shall engage in the business of laundering, cleaning, or sterilizing cloths or material for wiping rags, or selling wiping rags without a permit therefor from the board of health. Such permit shall be granted as of course on the first application and may be revoked by the board of health for violation by the holder of any of the provisions of this ordinance. Subsequent permits to a person, firm, or corporation in place of a permit revoked may be granted or refused at the discretion of the board. The board of health shall keep a register of all persons engaged in laundering, cleaning, sterilizing, or selling wiping rags, and shall enter therein the place of business, the date of issue, and the revocation of permit.

PENALTY.

Sec. 13. Any person, firm, or corporation who shall violate any of the provisions of this ordinance shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not to exceed $500, or by imprisonment in the county jail for not more than six months, or by both such fine and imprisonment.

Sec. 14. The police authorities are hereby directed to have the provisions of this ordinance enforced.

Sec. 15. This ordinance shall take effect and be in force 10 days after its passage. [Ordinance adopted Sept. 18, 1911.]

CEREBROSPINAL MENINGITIS IN TEXAS.

Cerebrospinal meningitis was reported present in Texas, January 9, in 12 localities, with a total of approximately 300 known cases, occurring to that date. On January 16 Passed Asst. Surg. von Ezdorf was directed to confer with the State health authorities of Texas and to investigate the prevalence of the disease. He reported January 20 that the principal points of prevalence were Austin (5 cases, 1 death), Dallas (about 200 cases), Waco (100 cases, 39 deaths), Fort Worth (37 cases, 18 deaths), Houston (8 cases), and that in 36 towns and counties in various parts of the State 95 other cases had been reported.

Dr. von Ezdorf further reported January 25 that to that date there had been 61 cases with 27 deaths at Fort Worth since December, and 249 cases with 110 deaths at Dallas since October.

On January 20, Surg. Guiteras at Galveston reported that a death from cerebrospinal meningitis occurred January 19 in the person of a Negro dock laborer, age about 35 years, who had not been absent from Galveston for several months, and that a case suspicious of the same disease was reported there January 20.

CASE OF LEPROSY IN INDIANAPOLIS, IND.

Dr. Charles S. Woods, commissioner of public health and charities, of Indianapolis, reports that on December 26, 1911, a case of leprosy was notified to the department of public health and charities. The patient is Mrs. L. B., age 61, colored, widow, living in Indianapolis. She was born in Hawkins County, Tenn., about 60 miles from Knoxville. Her mother was free and her father was a slave. She moved to Knoxville, Tenn., during her childhood and lived there until May, 1907, when she moved to Indianapolis. She did general housework and laundry work while in Tennessee and since living in Indianapolis has done laundry work. She gives no history of leprosy in the family nor does she remember ever having seen a case. The source of the infection is unknown.

She has had six children, two living, one died at age of 18 months and the other three at over 20 years of age. Her husband died about 15 years ago. She has always been well. In the fall of 1907 (before she left Tennessee) a spot appeared on her forehead which felt as if she had been stung by a bee. This later became a nodule.

The case is one of tubercular leprosy and during the past few months there have been rapid progress and change. There is some sensory disturbance, but the case has few of the anæsthetic characteristics. A microscopic examination has been made repeatedly and the lepra bacillus is microscopically demonstrable. The facies is characteristic. Some enlargement of the left ulnar nerve is present. The skin of the body is involved and there are numerous nodules on the chest, arms, and legs.

The patient is absolutely quarantined.

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 2,172 acres of land in Alameda County were covered with poison during the week ended January 6, 1912.

During the same period 5,700 acres of land in San Joaquin County and 5,920 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Jan. 6, 1912	5	[1] 118	65	
Fresno	do		[2] 75	75	
Oakland	do	10	[3] 498	409	
San Francisco	do	7	[4] 1,283	980	
Counties—					
San Joaquin	do		[5] 113	113	
Santa Clara	do		[6] 50	50	
Washington:					
City—					
Seattle	do		1,073	1,036	

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[1] Identified: Mus norvegicus, 75; Mus musculus, 43.

[2] Identified: Mus alexandrinus, 72; Mus rattus, 1; Mus musculus, 1; unidentified, 1.

[3] Identified: Mus norvegicus, 428; Mus musculus, 69; Mus rattus, 1.

[4] Identified: Mus norvegicus, 657; Mus rattus, 187; Mus musculus, 305; Mus alexandrinus, 134.

[5] Identified: Mus norvegicus, 99; Mus rattus, 2; Mus musculus, 8; Mus alexandrinus, 4.

[6] Identified: Mus norvegicus, 50.

SQUIRRELS COLLECTED.

During the week under report 14 squirrels were found dead in Alameda County, Cal.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED JAN. 26, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
California:				
Counties—				
Los Angeles	Dec. 1-31	19	3	
Orange	do	1		
San Bernardino	do	7		
San Diego	do	4		
Santa Cruz	do	1		
Stanislaus	do	1		
Tulare	do	1		
Total for State		34	3	
*Louisiana:				
New Orleans	Jan. 7-13	3		
Michigan:				
Counties—				
Allegan	Dec. 1-31	1		
Delta	do	1		
Eaton	do	2		
Huron	do	1		
Ingram	do	1		
Ionia	do	2		
Jackson	do	24		
Leelanau	do	5		
Manistee	do	1		
Monroe	do	6		
Montcalm	do	5		
Ontonagon	do	5		
Ottawa	do	1		
St. Clair	do	2		
Wayne	do	12		
Total for State		69		
South Dakota:				
Counties—				
Day	Dec. 1-31	1		
Lincoln	do	1		
Minnehaha	do	6		
Stanley	do	2		
Total for State		10		
*Tennessee:				
Knoxville	Jan. 7-13	1		
Washington:				
Counties—				
Franklin	Nov. 1-30	1		
King	do	3		
Kittitas	do	2		
Lincoln	do	2		
Pend Oreille	do	12		
Pierce	do	3		
Spokane	do	30		
Walla Walla	do	1		
Yakima	do	3		
Total for State		57		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended Jan. 26, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Wisconsin:				
Counties—				
Adams	Dec. 1-31	2		
Bayfield	do	2		
Chippewa	do	1		
Dane	do	5		
Douglas	do	29		
Kenosha	do	1		
La Crosse	do	5		
Marathon	do	7		
Wood	do	34		
Total for State		86		
Grand total for the United States		260	3	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED JAN. 6, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	170	30	3	5	....	25	2	....	....	48	21	10	....
Boston, Mass	670,585	208	49	7	139	3	38	1	....	....	53	13	9	....
Chicago, Ill	2,185,283	685	129	19	54	....	116	9	....	....	113	80	24	4
Cleveland, Ohio	560,663	139	35	1	50	3	34	1	....	....	26	16	8	....
New York, N. Y	4,766,883	1,405	252	20	498	7	234	8	....	....	314	167	66	11
Philadelphia, Pa	1,549,008	536	66	13	11	....	25	2	....	....	58	50	147	11
Pittsburg, Pa	533,905	145	26	3	7	....	13	1	....	....	20	17	14	3
St. Louis, Mo	687,029	192	29	3	2	....	21	3	....	....	33	12	4	....
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	132	22	4	16	....	12	....	....	....	15	12	7	2
Cincinnati, Ohio	364,463	118	14	....	3	....	26	....	2	....	24	15	5	1
Los Angeles, Cal	319,198	131	7	1	2	....	14	....	....	....	20	22	2	....
Milwaukee, Wis	373,857	90	15	1	23	....	32	2	....	....	10	7	17	1
Newark, N. J	347,469	100	35	2	....	....	21	....	....	....	21	12	....	....
New Orleans, La	339,075	124	3	....	....	....	7	....	3	....	39	26	4	....
San Francisco, Cal	416,912	161	7	....	192	....	12	....	....	....	19	10	1	....
Washington, D. C	331,069	129	12	....	....	....	8	....	....	....	26	16	13	1
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	51	27	2	....	....	11	....	....	....	....	7	....	....
Jersey City, N. J	267,779	73	12	1	1	....	8	....	1	....	8	4	1	....
Kansas City, Mo	248,381	17	4	....	....	....	2	....	1	....	10	7	2	....
Providence, R. I	224,326	66	14	1	11	1	11	1	1	....	....	5	1	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 6, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	27	1		1						2		1	
Cambridge, Mass	104,839		19	1		1	8				4	6		
Columbus, Ohio	181,548	53	7		12		12		1		5	5		
Dayton, Ohio	116,577	27	3	1								2		1
Fall River, Mass	119,295	28	6	1			1				4	3	1	
Grand Rapids, Mich	112,571	39	8				3				1	3	2	
Lowell, Mass	106,294	32	8		14	1	11				4	2	1	
Nashville, Tenn	110,364	11	5								3	2	2	
Oakland, Cal	150,174	35	1				1				1	6		1
Omaha, Nebr	124,096	44	6	1			5					1	1	1
Spokane, Wash	104,402		3		8		3		9		1	1	1	
Toledo, Ohio	168,497	46	5	1	5		9		1		9	5	5	
Worcester, Mass	145,986	46	7		1		12				3	1	1	
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	8	3				1				1	1		
Bayonne, N. J	55,545		4		2									
Brockton, Mass	56,878	16	1		37						7	1	3	
Camden, N. J	94,538		3				5							
Elizabeth, N. J	73,409	25	3	1	10		8				1	4	1	
Erie, Pa	66,525	16	3				1				5	2	2	1
Evansville, Ind	69,647	19	2		2				1			2	4	
Harrisburg, Pa	64,186	27	9	2	1						5	3		
Hartford, Conn	98,915	26	10				5				2		1	
Hoboken, N. J	70,324		8	1							4			
Houston, Tex	78,800	23	1	1								1		1
Johnstown, Pa	55,482	14	3	1	1		1					1		
Lawrence, Mass	85,892	30	3		3						3	1	2	1
Lynn, Mass	89,336	31	7	2	2		4				2	3	3	1
Manchester, N. H	70,063	21	2		19								1	1
New Bedford, Mass	96,652	39	1				2				3	6	2	1
Passaic, N. J	54,773	17	4	1	3		1					1		
Peoria, Ill	66,950	26	1		2				1					
Portland, Me	58,571	21	1				2					1	3	
Reading, Pa	96,071	23	12	2			18				3		2	
St. Joseph, Mo	77,403	14	1				2					2	1	
San Antonio, Tex	96,614	38	1		5		2					*10		
Schenectady, N. Y	72,826	18	2		2		1				4		1	
South Bend, Ind	53,684	12	1									2		
Springfield, Ill	51,678	15	3						3			1		
Springfield, Mass	88,926	24	2		49		3				2	1	1	1
Terre Haute, Ind	58,157			1			3		1			2		1
Trenton, N. J	96,815	45	2	1			3				4	5	2	
Wilkes-Barre, Pa	67,105	16	7		366						3	1		
Wilmington, Del	87,411	25		1								6		
Yonkers, N. Y	79,803	23	5	1	4		17				3	2		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	11	6	2										
Aurora, Ill	29,807	8	2											
Berkeley, Cal	40,434	7	1	1	1									
Binghamton, N. Y	48,443	18			2						1	1		
Brookline, Mass	27,792	12	7											
Butte, Mont	39,165	27						3				2		
Chattanooga, Tenn	44,604											2	1	1
Chelsea, Mass	32,452	6	1		6		3				1			
Chicopee, Mass	25,401	7	1								1	2		
Danville, Ill	27,871	9	1				1					1		
Dubuque, Iowa	38,494	7	3											
East Orange, N. J	34,371	3	1		2						1			
Elmira, N. Y	37,176	13	1				1						1	1
El Paso, Tex	39,279	30	1				1					3	3	
Everett, Mass	33,484	8	1		7									
Haverhill, Mass	44,115	15	5		12		4					2		
Kalamazoo, Mich	39,437	9					1				3	1		
Knoxville, Tenn	36,346	10	1									3		
La Crosse, Wis	30,417	10	2	1			1				2			
Lancaster, Pa	47,227		3				2						1	
Lexington, Ky	35,099	20	1		20							1		

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 6, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants—Continued.														
Lima, Ohio	30,508	3	2											
Lynchburg, Va	29,494	13	1		3		3							
Malden, Mass	44,404	5			6		2				1			
Montgomery, Ala	38,136	16	3				2		1					1
Mount Vernon, N. Y	30,919		2		21						2			
Newcastle, Pa	36,280		9				1				9		8	
Newport, Ky	30,309	7	1				2				1	1		
Newton, Mass	39,806	10			4								1	
Niagara Falls, N. Y	30,445	8	1									1	10	1
Norristown, Pa	27,875	7	1		12		2				5	1		
Orange, N. J	29,630	7	10		1		5				4			
Pasadena, Cal	30,291	10									1	2		
Pittsfield, Mass	32,121	14	3	1			2				2	1		
Portsmouth, Va	33,190	6	9	1			2		1					
Racine, Wis	38,002	17	1											1
Roanoke, Va	34,874	9	5		10						4		2	
Salem, Mass	43,697	9	1				3				3	1		
San Diego, Cal	39,578	3			1						2	2		
South Omaha, Nebr	26,259	12									1	1		
Superior, Wis	40,384	1							3					
Taunton, Mass	34,259	15					5				2			
Waltham, Mass	27,834	11									1			
West Hoboken, N. J	35,403		3				1							
Wheeling, W. Va	41,641	17	3								1	1	3	1
Williamsport, Pa	31,860	13	1										1	
York, Pa	44,750		5										2	
Zanesville, Ohio	28,026	12	4	1									7	
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	8					3							
Beaver, Falls, Pa	12,191		3										4	
Bennington, Vt		3											1	
Biddeford, Me	17,079	1	3									1		
Braddock, Pa	19,957	13										1		
Butler, Pa	20,782	6												
Cambridge, Ohio	11,327	2			3									
Carbondale, Pa	17,040	1			2		1							
Clinton, Mass	13,075	1					1				2			
Columbus, Ga	20,554	6												
Columbus, Ind		2	1						2					
Concord, N. H	21,497	5												
Cumberland, Md	21,839	5	3	1			1						3	1
Galesburg, Ill	22,089	8	1										1	1
Gloucester, Mass	24,398	6										1		
Harrison, N. J	14,498	3	1											
Homestead, Pa	18,713	8	3		1		1				1	1		
Kearny, N. J	18,659	10	3		2									
La Fayette, Ind	20,081	12										1		
Lebanon, Pa	20,081	5	5		1								1	
Marinette, Wis	14,610	1			8								7	
Marlboro, Mass	14,579	5									1			
Medford, Mass	23,150	2			1		1						1	
Melrose, Mass	15,715	5			3									1
Moline, Ill	24,199	7	1									1		
Montclair, N. J	21,150		3				2				2		2	
Morristown, N. J	12,507	2												
Nanticoke, Pa	18,857	12	1		34									
Newburyport, Mass	19,240	5	1								2			
North Adams, Mass	22,012	5		1							1			
Northampton, Mass	19,431	4			3						3			
Ottumwa, Iowa	22,012	9												
Palmer, Mass		1												
Peekskill, N. Y		2	2				1				1			
Pottstown, Pa		3			1		1							
Saratoga Springs, N. Y		7											1	
South Bethlehem, Pa	19,973	6	3	1	5								1	
Steelton, Pa	14,246		3						5					
Warren, Pa	11,080	1											1	
Wilkinsburg, Pa	18,924	6	2				6							
Woburn, Mass	15,308	5									1	1		

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

CONNECTICUT.—Month of December, 1911. Population of reporting towns 1,129,399. Total number of deaths from all causes 1,340, including diphtheria 24, measles 5, scarlet fever 11, tuberculosis, pulmonary, 113, typhoid fever 8. Cases reported: Diphtheria 237 in 52 towns, measles 148 in 24 towns, scarlet fever 234 in 41 towns, tuberculosis, pulmonary, 113 in 32 towns, typhoid fever 57 in 22 towns.

FLORIDA.—Week ended January 6, 1912. Reports from the State board of health show diphtheria present in 2 localities with 7 cases, malaria in 3 localities with 18 cases, smallpox in 4 counties with 33 cases, tuberculosis in 2 localities with 5 cases, typhoid fever in 2 localities with 2 cases.

MARYLAND.—Month of November, 1911. Population 1,295,346. Total number of deaths from all causes 799, including diphtheria 7, scarlet fever 2, tuberculosis 80, typhoid fever 52. Cases reported: Diphtheria 117, measles 16, scarlet fever 94, typhoid fever 206. The typhoid fever cases were distributed as follows: Potomac River watershed 87, Patapsco River watershed 14, Patuxent River watershed 33, Susquehanna River watershed 3, Choptank River watershed 1, Herring Run watershed 1, Baltimore city 6.

MASSACHUSETTS.—Week ended November 4, 1911. Population of reporting towns 2,565,623. Total number of deaths from all causes 632, including diphtheria 8, measles 1, tuberculosis 75, typhoid fever 3. Cases reported: Diphtheria 141, measles 61, scarlet fever 107, tuberculosis 125, typhoid fever 54.

Week ended November 11, 1911. Total number of deaths from all causes 685, including diphtheria 8, measles 5, scarlet fever 3, tuberculosis 49, typhoid fever 9. Cases reported: Diphtheria 157, measles 105, scarlet fever 120, tuberculosis 112, typhoid fever 65.

Week ended November 18, 1911. Total number of deaths from all causes 661, including diphtheria 8, measles 1, scarlet fever 1, tuberculosis 52, typhoid fever 12. Cases reported: Diphtheria 139, measles 149, scarlet fever 117, smallpox 1, tuberculosis 140, typhoid fever 35.

Week ended November 25, 1911. Total number of deaths from all causes 645, including diphtheria 9, measles 2, scarlet fever 1, tuberculosis 58, typhoid fever 5. Cases reported: Diphtheria 139, measles 187, scarlet fever 157, smallpox 1, tuberculosis 117, typhoid fever 44.

MINNESOTA.—Month of September, 1911. Population 2,075,708. Total number of deaths from all causes 1,489, including diphtheria 21, measles 1, scarlet fever 7, tuberculosis 132, typhoid fever 23.

PENNSYLVANIA.—Reports from the State department of health show as follows: Morbidity month of October, 1911: Total number of deaths reported 8,399, including typhoid fever 221, scarlet fever 30, diphtheria 264, measles 16, whooping cough 50, influenza 31, malaria 6, tuberculosis of the lungs 588, tuberculosis of other organs 100, cancer 404, diabetes 62, meningitis 142, anterior poliomyelitis 7, pneumonia 575, diarrhea and enteritis under 2 years 559, diarrhea and enteritis over 2 years 113, Bright's disease 491, early infancy 597, suicide 70, accidents in mines 104, railway injuries 126, other forms of violence 458, all other diseases 3,485.

TEXAS.—Month of October, 1911. Population 3,896,542. Total number of deaths from all causes 2,124, including diphtheria 31, measles 1, scarlet fever 2, smallpox 1, tuberculosis 256, typhoid fever 110, typhus fever 7. Cases reported: Diphtheria 130, scarlet fever 61, tuberculosis 58, typhoid fever 194.

FOREIGN AND INSULAR.

CANADA.

Ontario—Communicable Diseases in December, 1910-11.

The following statement of communicable diseases in the Province of Ontario for the month of December, 1911, as compared with December, 1910, was issued by the Ontario provincial board of health:

Diseases.	1910		1911	
	Cases.	Deaths.	Cases.	Deaths.
Infantile paralysis	14	2	....	....
Cerebrospinal meningitis	10	8	2	2
Smallpox	33	....	41	....
Scarlet fever	494	15	264	19
Diphtheria	263	36	355	31
Measles	339	7	112	2
Whooping cough	28	6	5	1
Typhoid fever	134	30	197	21
Tuberculosis	113	77	113	68
Total	1,428	181	1,089	144

The decrease noted in December, 1911, is stated to be due to the large diminution in diseases among children.

The population of the Province is approximately 2,500,000.

CHINA.

Hongkong—Plague.

Surg. Brown reports the occurrence of 1 case of plague with 1 death during the week ended December 16, 1911.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911.

The last plague-infected rat was found at Honokaa December 18, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

Week ended Dec. 30, 1911.

Total rats and mongoose taken	342
Rats trapped	340
Mongoose trapped	2
Rats examined bacteriologically	316
Classification of rats trapped:	
Mus alexandrianus	52
Mus musculus	53
Mus norvegicus	32
Mus rattus	203
Average number of traps set daily	1,720

Mosquito-Eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy:

Mosquito-eradication measures conducted at Honolulu from Dec. 10 to 17, 1911, both inclusive.

Inspections of—	Total inspections.	Larvæ found in—	Cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled.	Ordered repaired.	Fixtures installed.	Screened.	Stocked with fish that destroy mosquito larvæ.
Gutters:												
House	906	53	164	67	707				33			
Street	128	1	54	76	15							
Standing water	420	29		385	27			4				7
Cesspools	556	6		342	6				7		1	
Privy vaults	585	1		427					7			
Holes and low places	435	18		122	3			183				
Catch basins	191	6		161								
Leaky fixtures	135								105			
Banana and other plants		45					45					
Swamps	18	6		16				1				
Ponds	62	1		3								9
Troughs and tanks	120	10		47		77						6
Tubs and other receptacles	517	31				341						
Tin cans, bottles, etc	20,268	77					20,268					
Water barrels	93	2				75						
Vacant houses		4										

Mosquito-eradication measures conducted at Honolulu from Dec. 17 to 23, 1911, both inclusive.

Inspections of—	Total inspections.	Larvæ found in—	Cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled.	Ordered repaired.	Fixtures installed.	Screened.	Stocked with fish that destroy mosquito larvæ.
Gutters:												
House	2,827	158		1,410	1,746							
Street	152	7		109	52							
Standing water	1,124	54		882	68			10				8
Cesspools	1,181	37		879	7				2		174	
Privy vaults	894	10		616	25			1	2			
Holes and low places	557	56		171	48			235	19			
Catch basins	189	4		131		54						
Leaky fixtures	222								124			
Swamps	25	6		19								
Ponds	72	5		63	10			3				5
Troughs and tanks	145	10		33		86					3	
Tubs and other receptacles	489	10		6		431						
Tin cans, bottles, etc.	3,520	22					3,530					
Water barrels	218	58		34		157					10	1
Vacant houses		6		2								

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended November 25, 1911, 39 deaths from cholera and 9 from plague were reported at Calcutta; in all Bengal, 344 cases of plague with 255 deaths; in all India, 8,589 cases of plague with 6,922 deaths.

ITALY.

Status of Cholera.

During the week ended December 17, 1911, cholera was reported present in Italy as follows: In the Province of Caltanisetta, 10 cases with 4 deaths in two localities; in the Province of Girgenti, 8 cases with 6 deaths in one locality.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo week ended December 30, 1911:

NAPLES.

Date	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Dec. 24	Ivernia	New York			
Dec. 29	Perugia	do	147	20	245
	Total		147	20	245

PALERMO.

Date	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Dec. 28	Cerea	New York			
Dec. 30	Perugia	do	118	60	120
	Total		118	60	120

JAPAN.

Communicable Diseases in Kanagawa Ken.

Surg. Irwin at Yokohama reports: The sanitary authorities report 413 cases of diphtheria, 241 of dysentery, 81 of scarlet fever, 1 of smallpox, and 584 of typhoid fever present in Kanagawa Ken, December 19, 1911.

NATAL.

Plague at Durban.

Information received January 17 from the American consul shows the presence of plague at Durban. One death from plague was reported.

NEW ZEALAND.

Auckland—Examination of Rats.

The following information was taken from bulletins issued by the department of public health of New Zealand: During the 8 weeks ended December 9, 1911, 1,109 rats were examined for plague infection. No plague-infected rat was found.

The last case of human plague was reported May 8, 1911. The last plague-infected rat was found May 31, 1911.

TUNIS.

Status of Cholera.

During the period from December 8 to 21, 1911, 161 deaths from cholera were officially reported in the Regency of Tunis.

ZANZIBAR.

Zanzibar—Examination of Rats.

Consul Weddell reports: During the two weeks ended November 28, 1911, 2,171 rats were examined for plague infection. No plague-infected rat was found.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED JAN. 26, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Hungary				Total Dec. 3-23: Cases, 21.
Backs-Bodog	Dec. 10-16	9		
Jasz-Nagykun-Szolnok	Dec. 3-23	11		
Torontal	Dec. 10-16	1		
Croatia and Slavonia—				
Sriem	do	5		
Bulgaria:				
Burgas	Nov. 22-23	2	2	
India:				
Calcutta	Nov. 19-Dec. 9		123	
Madras	Dec. 10-16	80	64	
Indo-China:				
Saigon	Nov. 20-Dec. 3	30	25	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended Jan. 26, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Italy				Total Dec. 17-24: Cases 30, deaths 14.
Provinces—				
Caltanisetta	Dec. 17-23	1		
Girgenti	do	15	6	
Syracuse	do	14	8	
Roumania:				
Districts—				
Braila	Nov. 24-Dec. 13	1		
Doliju	do	1	2	
Tulcea	do		1	
Siam:				
Bangkok	Nov. 5-Dec. 2		149	
Tripoli:				
Tripoli	Oct. 25-Nov. 10			[1] 150 to 200 among the civil population and 25 to 30 among the military.
Tunis regency	Dec. 8-21	156	161	
Turkey in Asia:				
Kharput	Nov. 28-Dec. 16	38	30	
Mekka	do	158	165	
Tor	Dec. 14-26	29		

YELLOW FEVER.

Brazil:			
Manaos	Dec. 19-23		1

PLAGUE.

Brazil:			
Para	Dec. 24-30	5	1
Chile:			
Iquique	Dec. 10-23	6	1
China:			
Hongkong	Dec. 9-16	1	1
Egypt:			
Provinces—			
Assiout	Oct. 14-Dec. 27	22	22
Behera	Oct. 15-Dec. 26	3	1
Galioubeh	Oct. 5-Dec. 26	1	
India:			
Calcutta	Nov. 19-Dec. 9		16
Kurrachi	Dec. 3-16	5	4
Indo-China:			
Saigon	Nov. 27-Dec. 3	1	1
Mauritius	Nov. 17-23	7	3
Natal:			
Durban	Jan. 17		1
Siam:			
Bangkok	Nov. 4-Dec. 2		2
Straits Settlements:			
Singapore	Nov. 26-Dec. 2	5	5

SMALLPOX.

Arabia:			
Aden	Dec. 12-18		1
Brazil:			
Pernambuco	Nov. 16-30		67
Canada:			
Ontario—			
Sarnia	Dec. 1-31	41	
Toronto	Jan. 6-13		1
Quebec—			
Quebec	Jan. 7-13	17	1
Chile:			
Iquique	Dec. 10-16	2	
Talcahuano	Dec. 10-23	7	1

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[1] Das österreichische Sanitatswesen, Dec. 21, 1911.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended Jan. 26, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong	Dec. 3-16	18	14	
Nangking	Dec. 10-16			Present.
Egypt:				
Cairo	Dec. 10-16	1		
France:				
Paris	Dec. 17-30	17	2	
Gibraltar	Dec. 24-31	4		
India:				
Calcutta	Nov. 26-Dec. 2		1	
Madras	Dec. 10-16	5	5	
Italy:				
Leghorn	Dec. 24-30	8		
Naples	do	5	1	
Palermo	do	313	90	
Indo-China:				
Saigon	Nov. 20-Dec. 3	13		
Japan:				
Kanagawa, ken	Dec. 17-23	1		
Malta	Dec. 24-30	2		
Mexico:				
Aguascalientes	Jan. 1-7		1	
Magdalena	Dec. 24-Jan. 8	54		Jan. 13, 76 cases in quarantine.
Mexico	Dec. 9-16	12	8	
Santa Ana	Jan. 8	4		
San Ignacio	do	3		
San Luis Potosi	Nov. 26-Dec. 2	1		
Portugal:				
Lisbon	Dec. 24-30	7		
Russia:				
Odessa	Dec. 17-23	2		
Reval	Nov. 1-30	1		
Warsaw	Nov. 5-Dec. 2		185	
Spain:				
Malaga	Nov. 1-30		45	
Valencia	Dec. 24-30	10	1	
Straits Settlements:				
Singapore	Nov. 26-Dec. 2	3		
Turkey in Europe:				
Constantinople	Dec. 25-31		5	
Venezuela:				
Caracas	Nov. 1-Dec. 31	11		

REPORTS RECEIVED FROM DEC. 30, 1911, TO JAN. 19, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Croatia and Slavonia				Total Oct. 22-Dec. 3: Cases, 31.
Sriem	Oct. 22-Dec. 3	31		
Hungary				Total Nov. 19-Dec. 9: Cases 16.
Torontal	Nov. 19-Dec. 9	16	2	
Bulgaria:				
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24-Oct. 9: Cases, 322; deaths, 256.
Batavia	Nov. 12-Dec. 2	14	5	
India:				
Calcutta	Nov. 5-18		81	
Madras	Nov. 26-Dec. 9	216	167	Madras Presidency, Dec. 1-31: Cases 3,879; deaths, 2,412.
Rangoon	Oct. 1-31	2	1	
Italy				Total June 8-Dec. 24: Cases, 15,979; deaths, 6,021.
Provinces—				
Caltanisetta	Nov. 26-Dec. 17	7	7	
Girgenti	do	85	50	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	do	1	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Jan. 1 to Jan. 19, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Malta	Nov. 19–Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4–11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Philippine Islands:				
Province—				
Union	Oct. 29–Dec. 4	5	5	
Straits Settlements:				
Singapore	Nov. 5–18	3	3	
Tunis Regency				Total Nov. 25–Dec. 7: Cases, 160; deaths, 210.
Beja district	Nov. 25–Dec. 7	30	35	
Bizerta district	Nov. 25–Dec. 5	9	15	
Turkey in Asia:				
Adana	Dec. 2–6	16	5	
Basra	Oct. 22–28	14	10	
Erzeroum, vilayet	Sept. 11–16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kharput	Nov. 19–Dec. 9	29	22	
Jiddah	Dec. 2–10	77	46	
Mekka	Dec. 4–10	716	678	
Mersina	Dec. 1–7	2	1	
Osmania	Dec. 1–6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18–23	64	34	
Turkey in Europe:				
Constantinople	Oct. 24–30	5	1	
Saloniki, vilayet	Nov. 6–19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Manaos	Nov. 19–Dec. 2		4	
Para	Dec. 9–16	1	1	
Ecuador:				
Bucay	Nov. 16–30	2		
Duran	Dec. 1–15	3	2	
Guayaquil	Nov. 16–Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Merida	Nov. 12–Dec. 30	5	6	Total Aug. 1–Dec. 30: Cases, 50 deaths, 26.
Venezuela:				
Caracas	Nov. 16–Dec. 7	11		
Sabana Grande	Dec. 12			Epidemic.
At Sea	Dec. 17–23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096. Vol. XXVI.
Brazil:				
Bahia	Sept. 1–30		2	
Rio de Janeiro	Nov. 12–Dec. 2	3	1	
British East Africa:				
Kismayu	Oct. 15–25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12–Dec. 9	3	3	
China:				
Amoy	Jan. 15			Present.
Dutch East Indies:				
Java				Total Mar. 1–Dec. 9: Cases, 1,777; deaths, 1,262.
Pasoeroean Residency, Malang District.	Nov. 12–Dec. 9	31	16	
Soerobaya	Oct. 17–27	2		
Ecuador:				
Guayaquil	Nov. 16–Dec. 15	102	42	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Jan. 1 to Jan. 19, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Egypt:				
Provinces—				
Assiout	Oct. 14-Dec. 13	16	14	
Kena	Nov. 20-Dec. 13	3	3	
Minieh	Dec. 13	1		
India:				
Bombay	Nov. 19-Dec. 9	25	23	
Calcutta	Nov. 11-18		14	
Karachi	Nov. 26-Dec. 2		3	
Rangoon	Oct. 1-31	26	27	
Bombay Presidency and Sind.	Oct. 29-Dec. 9	27,376	19,684	
Madras Presidency	do	3,589	2,886	
Bengal	do	1,537	1,136	
United Provinces	do	6,139	4,975	
Punjab	do	820	579	
Burma	do	90	84	
Central Provinces	do	3,803	2,838	
Coorg	do	45	22	
Mysore State	do	3,600	2,787	
Hyderabad State	do	6,012	5,651	
Central India	do	3,403	2,825	
Rajputana and Ajmere Merwara.	do	302	246	
North West Province	do	1	1	Total for India, Oct. 29-Dec. 9: Cases, 56,717; deaths, 43,714.
Indo-China:				
Saigon	Nov. 13-19	3		
Mauritius	Nov. 3-16	6	5	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai
Russian Empire:				
Astrakhan, government	Nov. 28-Dec. 20	87	84	
Straits Settlements:				
Singapore	Nov. 5-25	4	4	

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Arabia:				
Aden	Nov. 28-Dec. 4	1		
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	do		25	
Austria-Hungary:				
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Nov. 15		179	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Dec. 2	1	1	
Canada:				
British Columbia—				
Nelson	Dec. 24-30	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-23	12		
Sarnia	Oct. 17-23	1		
Quebec—				
Montreal	Dec. 17-23	2		
Quebec	Dec. 10-Jan. 6	120		
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Talcahuano	Nov. 26-Dec. 9	7	2	
Valparaiso	Dec. 3-9	43		
China:				
Canton	Nov. 11-25	15	3	
Chungking	Nov. 18-25			Present.
Hongkong	Nov. 12-25	16	10	
Cuba:				
Habana	Dec. 19	1		From German s. s. Frankenwald from Spain and Canary Islands.
France:				
Marseille	Nov. 1-30		1	
Paris	Dec. 3-16	26	2	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Jan. 1 to Jan. 19, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 19-Dec. 9	25	13	
Madras	Nov. 26-Dec. 9	18	10	
Rangoon	Oct. 1-31	18	6	
Indo-China:				
Saigon	Nov. 13-19	2		
Italy:				
Genoa	Dec. 1-15	6	1	
Leghorn	Dec. 16-23	43	1	
Naples	Dec. 3-23	26		
Palermo	Nov. 26-Dec. 16	950	322	
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Java:				
Batavia	Nov. 12-Dec. 9	10	3	
Mexico:				
Aguascalientes	Dec. 18-24		1	
Chihuahua	Nov. 20-Dec. 26	30	6	
Coahuila, State	Oct. 1-30		16	
Juarez	Dec. 19-23	1		
Magdalena	Dec. 23	45	13	
Mazatlan	Dec. 11-Jan. 2		4	
Mexico	Nov. 26-Dec. 9	4	2	
Monterey	Dec. 11-24		2	
Porfirio	Dec. 3-Jan. 6	20	20	
Sandoval	Dec. 16			Present.
San Luis Potosi	Nov. 12-25	2		
Tampico	Dec. 1-20	4	4	
Tapachula	Nov. 1-22		13	
Portugal:				
Lisbon	Dec. 9-23	8		
Russia:				
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Dec. 9	7	2	
Odessa	Nov. 26-Dec. 16	5	1	
St. Petersburg	Nov. 19-Dec. 16	30	7	
Spain:				
Cadiz	Nov. 1-30		5	
Valencia	Dec. 19-23	11	1	
Straits Settlements:				
Singapore	Nov. 19-25	2		
Valencia	Dec. 3-16	16	2	
Switzerland:				
Zurich, Canton	do	2		From the Orient.
Teneriffe:				
Santa Cruz	Dec. 3-23		20	
Turkey in Asia:				
Beirut	do	30	10	
Turkey in Europe:				
Constantinople	Dec. 4-24		16	
Uruguay:				
Montevideo	Sept. 1-Oct. 31	19	3	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 1	3	1	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Dec. 30	163,084	68										1	
Aguascalientes	Dec. 31	40.000	47	4					1					2
Do	Jan. 7		38	3				1	3					
Aix-la-Chapelle	Dec. 16	156,467	49	3									8	
Amsterdam	Dec. 30	580,365	138	21						2	1		2	3
Do	Jan. 6		145	23						1	1		1	8
Barcelona	Dec. 28	591,272	275	18						3			1	2
Do	Jan. 5		285	18						2		3		1
Barmen	Dec. 9	170,700	33	2					1		1			1
Barranquilla	Dec. 30	46,000	17									1		
Batavia	Dec. 9	217,630	11			2			1					
Belfast	Dec. 30	385,492	125	16							5	2		3
Berlin	Dec. 10	2,082.972	597	83						1	14	27	3	3
Do	Dec. 23		543	59						1	8	24	2	9
Birmingham	Jan. 6	842.512	273							1	2	2	1	15
Bordeaux	Dec. 30	253,000	96	11										1
Do	Jan. 6		84	13									1	
Bremen	Dec. 16	246,850	71	7							1	2	1	
Do	Dec. 23		81	5							2	5	4	1
Bristol	Jan. 6	359,400	102	9							1	3		
Brunswick	Dec. 30	145,000		7						1	7	22		
Budapest	Dec. 16	1,000,000								2	5	2	10	
Do	Dec. 20									2	2	2	12	
Cairo	Dec. 9	689,439	428	26						3		5		
Do	Dec. 16		414	12					2	3		13		
Calcutta	Nov. 25	890,493	525	16	9	39								
Do	Dec. 2		540	22	5	51		1						
Do	Dec. 9		510	24	2	33								
Catania	Dec. 20	207,000	66	7					1		6	2	1	
Chihuahua	Dec. 24	39,000	20	1				2						
Cologne	Dec. 16	522,694	151	19						1	2	3	6	1
Do	Dec. 23	524,847	128											
Do	Dec. 30		142	15								3	3	1
Colombo	Dec. 9	213,974	170	10						13				
Constantinople	Dec. 31	1,000,000	252	30				5			7	4		
Copenhagen	Dec. 23	462,000	146	23							1		1	4
Dresden	Dec. 16	555,500	156	12							2	7	1	
Dublin	Dec. 30	403.732	160	30						1	1	3	3	4
Dundee	do.	171,006	50	5								2		
Do	Jan. 9		47	2								2		
Edinburgh	Dec. 30	320,829	95	7								4	2	
Do	Dec. 16		35	6						2		4		
Erfurt	Dec. 23	125,834	42	1						1	1	5		
Frankfort on the Main	do.	419,300	106								1	1		
Georgetown	Dec. 16	56,000	53	5						1				
Do	Dec. 30		55	3						1				
Ghent	Dec. 23	165,965	39	4							1	1		
Do	Dec. 30		35									1		1
Gibraltar	Dec. 31	25,367	8											
Glasgow	Jan. 5	784,655	274							2	3	5	17	4
Halifax	Dec. 16	46,000	26	2								2		
Do	Dec. 23		12	2								1		
Do	Jan. 6		14	1								1		
Hamburg	Dec. 30	931,035	259	34						1		13	6	3
Havre	do.	136,159	52	10						2				
Hongkong	Dec. 9	336,488						2				3		
Hull	Dec. 23	278,968	82							1	1			2
Do	Dec. 30		87							2				
Iquique	Dec. 16	40,000		7										
Do	Dec. 23			5	1					1				
Karachi	Dec. 9	148,000	86		1								3	
Do	Dec. 16		99		3									
Kharput	Dec. 2	21,000				12								
Do	Dec. 16			1		18				2				
Kingston, Jamaica	Dec. 30	59,584								1				
Konigsberg	Dec. 16	247,300	124	8								1	1	5
Do	Dec. 23		129	13								3	5	7
Leghorn	Dec. 30	104,000	41											
Leeds	Jan. 6	445,568	162	12						1		4		
Leith	Dec. 30	80,674	14	1								1		

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Leipzig	Dec. 23	595,703	158	30					1		1	2		1
Liege	Dec. 30	163,521	35	4							1			
Liverpool	Jan. 6	720,014	253	17							2	2	5	2
London	Dec. 30	7,269,752	1,926							3	5	18	14	14
Lubeck	Dec. 31	100,000	22	2							1		1	1
Madras	Dec. 16	518,660	625			64		5		1				1
Manaos	Dec. 23	52,000	46	4			1							
Manchester	Dec. 30	631,533	233	25						1		3	7	4
Mannheim	Dec. 16	198,800		4										1
Mexico	..do	719,052	341	20				8	5			2		14
Montreal	Jan. 13	466,197	102	22						5	4	1		3
Munich	Dec. 23	597,000	168	20								3	2	2
Nagasaki	Dec. 17	178,704	35	3								1		
Newcastle-on-Tyne	Dec. 3	267,261	76	7							1	1		
Nottingham	..do	259,942	81										10	
Odessa	Dec. 23	546,000	191	33					3	2	4	5	9	2
Palermo	Dec. 30	320.000	223	11				90		3	6			
Para	..do	185,000	68	8	1									
Paris	Dec. 23	2,847,000	937	198				1		8	2	5	15	1
Do	Dec. 30		885	197				1		6	5	8	19	1
Patras	Dec. 31	40,000	13	3						1				
Penang	Dec. 2	101,427	76	10						1				
Prague	Dec. 16	225,204	84	15							3	2	3	
Do	Dec. 23		68	12							2		1	
Progreso	Jan. 6	6,959	12	1									2	
Quebec	Jan. 13	78,200		3				1						
Rangoon	Dec. 2	289,432	172		3	5		1						
Rome	Aug. 26	551,749	215	19						5		1	1	1
Do	Sept. 2		184	21						5			2	
Do	Sept. 9		204	36						6				1
Saigon	Nov. 26	220,000	6			6								
Do	Dec. 3		20		1	19								
St. John	Jan. 13	40,711	11	1								1		
St. Pierre	Dec. 23	3,400								1				
San Luis Potosi	Dec. 2	82,946	68	3						1				
San Pedro	Dec. 9	10,000	4	1										1
Sarnia	Jan. 14	9,936	5								1			
Shanghai	Dec. 17	492,000	125	15								2		
Sheffield	Dec. 23	454,653	110	6						3	1	2	1	2
Do	Jan. 6		119	13						4	1	2	1	3
Singapore	Dec. 2	303,328	202	18	5					2				
Smyrna	..do	400,000	59	9						1		1		
Do	Dec. 9		55	8						2	2	1		
Do	Dec. 16		51	9								1	1	1
Do	Dec. 23		44	8						1		1		
Stettin	..do	237,000	84	7						2		8		
Do	Dec. 30		75	7								2		
Stockholm	Dec. 16	343,832	60	9										1
Stoke-on-Trent	Dec. 30	235,049	93	6						1			6	1
Talcahuano	Dec. 16	28,000		2				1					1	2
Do	Dec. 23			2									1	2
Tarragona	..do	23,150	8	1									1	
Tientsin	Dec. 16	465,000	24	8							1			
Toronto	Dec. 30	392,000	133	12						1	1	3		
Do	Jan. 6		113	4								7		1
Do	Jan. 13		116	10				1			2	6		1
Trieste	Dec. 16	233,925	76									1		1
Turin	Dec. 24	401,555	104	19						1				
Do	Dec. 30		111	13						2		1		
Valencia	..do	240,000	102	6				1			1	1	1	
Vienna	Dec. 9	2,064,583	586	99							2	3	8	3
Do	Dec. 16		603	86						1	1	5	7	4
Warsaw	Nov. 11	797,093	316	36				25		7	15	3	3	
Do	Nov. 18		302	34				20		8	18	7	6	2
Do	Nov. 25		253	23				19		6	18	6	6	1
Do	Dec. 2		292	41				17		3	21	4	7	2
Yokohama	Dec. 25	419,630										2		

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

AUSTRALIA—*Newcastle.*—Month of November, 1911. Population 60,700. Total number of deaths from all causes 43, including diphtheria 2, tuberculosis 1, typhoid fever 1.

BRAZIL—*Bahia.*—Month of September, 1911. Population 292.000. Total number of deaths from all causes 412, including measles 2, plague 2, tuberculosis 53.

Ceara.—Month of November, 1911. Population 60,000. Total number of deaths from all causes 96, including tuberculosis 12, typhoid fever 7.

Santos.—Two weeks ended November 11, 1911. Population 85,000. Total number of deaths from all causes 59. No contagious diseases reported.

BRITISH INDIA—*Rangoon.*—Month of October, 1911. Population 289,432. Total number of deaths from all causes 725, including cholera 1, plague 27, smallpox 6, tuberculosis 40.

CANADA—*Sherbrooke.*—Month of December, 1911. Population 17,700. Total number of deaths from all causes 16, including diphtheria 1, tuberculosis 4.

CHILE—*Punta Arenas.*—Month of October, 1911. Population 14,000. Total number of deaths from all causes 36, including tuberculosis 3, typhoid fever 1.

FORMOSA.—Two weeks ended December 2, 1911. Population 3,290,186. Total number of deaths from all causes not reported. The deaths include diphtheria 3, typhoid fever 4.

GERMANY—*Kehl.*—Month of November, 1911. Population 180,193. Total number of deaths from all causes 196, including diphtheria 2, scarlet fever 2, smallpox 1, tuberculosis 26, typhus fever 3.

GREAT BRITAIN.—Week ended December 23, 1911.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 15.8 per 1,000 of the population, which is estimated at 16,157,797.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 18.2 per 1,000 of the population, which is estimated at 1,149,495. The lowest rate was recorded at Sligo, viz, 4.7; and the highest at Kilkenny, viz, 39.7.

Scotland.—The deaths registered in 8 principal towns correspond to an annual rate of 18.6 per 1,000 of the population, which is estimated at 1,710,291. The lowest rate was recorded at Perth, viz, 13.1, and the highest at Greenock, viz, 25.6 per 1,000. The total number of deaths from all causes was 609, including diphtheria 7, measles 38, scarlet fever 3, typhoid fever 1.

ITALY—*Florence.*—Month of November, 1911. Population, 232,860. Total number of deaths from all causes 307, including measles 1, tuberculosis 43, typhus fever 12.

Malta.—Two weeks ended December 23, 1911. Population, 213,395. Total number of deaths from all causes 207, including diphtheria 1, measles 4, typhoid fever 1.

New Zealand.—Month of October, 1911.

Auckland.—Estimated population, 102,676. Total number of deaths 101, including tuberculosis 5.

Christchurch.—Estimated population, 80,193. Total number of deaths 58, including tuberculosis 6.

Dunedin.—Estimated population, 64,237. Total number of deaths 46, including tuberculosis 4.

Wellington.—Estimated population, 70,729. Total number of deaths 52, including diphtheria 2, measles 1, tuberculosis 4.

Russia.—*Libau.*—Four weeks ended September 13, 1911. Population, 90,000. Total number of deaths from all causes not reported. The deaths include diphtheria 1, scarlet fever 1, smallpox 2, typhoid fever 2.

Four weeks ended October 13, 1911. Total number of deaths from all causes not reported. The deaths include diphtheria 2, scarlet fever 4, typhoid fever 2.

Spain—*Cadiz.*—Month of November, 1911. Population, 67,306. Total number of deaths from all causes 165, including diphtheria 1, measles 3, scarlet fever 3, smallpox 5, tuberculosis 18, typhoid fever 1.

Huelva.—Month of November, 1911. Population, 28,982. Total number of deaths from all causes 57, including tuberculosis 5.

Madrid.—Year ended December 31, 1911. Population, 584,117. Total number of deaths from all causes 14,050, including diphtheria 157, measles 266, scarlet fever 10, smallpox 32, tuberculosis 1,823, typhoid fever 138, typhus fever 8.

By authority of the Secretary of the Treasury:

Rupert Blue,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

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THE RELATION OF SO-CALLED BRILL'S DISEASE TO TYPHUS FEVER.

AN EXPERIMENTAL DEMONSTRATION OF THEIR IDENTITY.

By John F. Anderson, Director Hygienic Laboratory, and Joseph Goldberger, Passed Assistant Surgeon.

Typhus fever has not appeared in epidemic form in the United States since the comparatively small outbreaks in New York in 1891–92 and in Philadelphia in 1883. Sporadic cases have been reported, as the 4 cases in Baltimore in 1901 and occasional cases among recently arrived immigrants. It has been a subject of speculation among health authorities why, in spite of the arrival of occasional cases in this country and of many persons from endemic foci of the disease, typhus fever apparently does not gain a foothold in the United States. It will be shown later that such a possibility is not without reason, and that the disease is actually present at all times in certain cities of the United States.

In 1898 Dr. Nathan E. Brill,[1] of New York, reported 17 cases of a disease clinically resembling typhoid fever but without the Widal reaction, and clearly set forth the differences between this group and the usual types of typhoid fever cases.

In April, 1910, he reported in a most interesting paper[2] a study of 221 cases of the same disease observed at Mount Sinai Hospital, New York City, from late in 1896 to December 1, 1909.

Since the important features of the disease as observed by him are well summed up in his definition, it is given:

> An acute infectious disease of unknown origin and unknown pathology, characterized by a short incubation period (four to five days), a period of continuous fever, accompanied by intense headache, apathy, and prostration, a profuse and extensive erythematous maculo-papular eruption, all of about two weeks' duration, whereupon the fever abruptly ceases either by crisis within a few hours or by rapid lysis within three days, when all symptoms disappear.

In a third paper Brill[3] reports on the study of 34 additional cases observed since the 221 previously reported. It may be noted that these 34 cases all occurred in the year ended December 1, 1910, and in the same hospital, indicating an increasing prevalence of the infection or greater skill in diagnosis. This paper of Brill's is of especial interest and value because it includes, in addition to clinical data, the report of an autopsy on a fatal case and the results of the inoculation of monkeys with blood from two cases in the acute stage, and with the blood and emulsion of the liver and the spleen from the fatal case. Dr. Brill states that from the report of the autopsy "the conclusion may be drawn that the organs showed congestion and general parenchymatous degeneration such as would obtain in any intense infectious disease."

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[1] Brill, Nathan E.: A study of 17 cases of a disease clinically resembling typhoid fever, but without the Widal reaction; together with a short review of the present status of the serodiagnosis of typhoid fever. N. Y. med. journ., vol 67, Jan. 8 and 15, 1898, pp. 48 and 77.

[2] Brill, Nathan E.: An acute infectious disease of unknown origin. A clinical study based on 221 cases. Am. journ. med. sci., April, 1910.

[3] Brill, Nathan E.: Pathological and experimental data derived from a further study of an acute infectious disease of unknown origin. Am. journ. med. sci., August, 1911.

From material obtained at the autopsy, made about 18 hours after death, Brill inoculated three monkeys; one intravenously with 5 c. c. of heart's blood, one intraperitoneally with an emulsion of the liver, and one intraperitoneally with an emulsion of spleen. The animals were kept under observation for three months and showed no signs of illness.

Brill also reports inoculations with blood obtained during life. In one case 5 c. c. of blood was drawn from a patient in the seventh day of the disease and was inoculated subcutaneously and intraperitoneally into a *Macacus rhesus;* in a second instance 5 c. c. was drawn from a patient in the sixth day of the disease, diluted with 10 c. c. sodium citrate solution, and inoculated intravenously into a *semnopithecus.* The temperature of the first animal was taken for one month and of the second for three weeks. Both animals were kept under observation for two months, during which time they were entirely free from illness.

Brill states that this experimental work in inoculating monkeys has, at least so far, established a fundamental difference between the disease described by him and Mexican typhus fever sufficient, perhaps, to stamp them as separate diseases. He still reserves in his mind the belief that the disease may be due to an attenuated modification of the virus of typhus fever, and awaits the results of the further work of other investigators, although in a letter to the editor of the Journal of the American Medical Association[1] he apparently withdraws this reservation, as he states that he has in vain attempted to prove that it is typus fever and shall regard it as such only when certain evidence set forth in his letter is produced and that until then he believes he is justified in calling this disease "an infectious disease of unknown origin."

Dr. Brill deserves the greatest credit for his careful study of the disease in question, and his ability as a close and careful observer is shown in first distinguishing cases of this disease, instances of which have almost certainly come under the observation of others.

Louria,[2] in a paper read before the Kings County Medical Society, reports the results of the observation of 18 cases in the Jewish Hospital, Brooklyn, N. Y., during the summer and fall of 1910.

Friedman,[3] on clinical grounds, expresses the opinion that Brill's symptom complex is identical with mild and moderately severe cases of typhus fever.

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[1] Journ. A. M. A., vol. 57, Dec. 2, 1911, p. 1854.

[2] Louria, Leon: Brill's disease. Med. rec., Aug. 26, 1911.

[3] Friedman, G. A.: Brill's symptom complex; typhus fever; Manchurian typhus. Arch. internal med., vol. 8, Oct. 15, 1911, p. 427. Abst. Med. rec., vol. 80, Sept. 16, 1911, p. 606.

About the time that Brill's second paper appeared (April, 1910) we were engaged in the study of Mexican typhus fever[1] and, having the picture of that disease clearly in our minds, we were struck by the very marked clinical resemblance between it and the disease described by Brill. Influenced by this resemblance, we endeavored to obtain access to cases of Brill's disease in order to determine if possible the relationship between that infection and typhus fever. This we did not succeed in doing, however, until September, 1911.

Through the courtesy of Dr. Leo Kessel, New York, and of Dr. Olsan, house physician at Mount Sinai Hospital, New York, we had the privilege of seeing a case of Brill's disease in the wards of Mount Sinai Hospital on September 20, 1911. Chart No. 1 shows the temperature of this patient (case No. 1, N.[2]) from the day of his admission to the hospital to the day of his discharge. We shall not, at this time, go into the history of this patient beyond stating that he was in the seventh day of his illness when we first saw him, and that the case was considered by those familiar with Brill's disease to be a typical one of that disease.

Blood was drawn from the arm vein, defibrinated, and used for the inoculation of two rhesus monkeys (Nos. 149 and 150), each animal receiving 3 c. c. of the defibrinated blood intraperitoneally. The next day, in the eighth day of illness, blood was again drawn from an arm vein of this patient, defibrinated, and about three hours later was used for the inoculation of two rhesus monkeys (Nos. 151 and 152), each animal receiving approximately 3.5 c. c. of the blood, diluted with an equal volume of normal salt solution, intraperitoneally. Monkey No. 152 died 10 days later as a result of a purulent peritonitis, and monkey No. 151, which was in poor condition at the time of inoculation, and refusing food, continued progressively to fail. Six days later, being moribund, the animal was chloroformed.

Monkey No. 149, during a period of observation lasting 31 days, showed no evidence of illness, by rise of temperature or otherwise.

Ten days after inoculation the temperature of monkey No. 150 began to rise, reaching its maximum (41.2° C.) six days later. The temperature of the animal remained high until the eleventh day of fever, when it fell by rapid lysis, reaching normal 14 days after the rise began. On the sixth day of fever, when the temperature was at its maximum, 10 c. c. of blood were drawn from the animal's heart, defibrinated, and used for the inoculation of two rhesus monkeys. Rhesus No. 157 was given 3.5 c. c. of the defibrinated blood and rhesus No. 158 was given 3 c. c., both intraperitoneally.

Five-tenths cubic centimeter of the defibrinated blood were planted in a tube of standard bouillon, and during a period of observation of 12 days gave no evidence of growth.

The temperature of both animals (Nos. 157 and 158) began to rise on the ninth day after inoculation. As monkey No. 158 gave promise of a more severe reaction than monkey No. 157, the former was selected for passage.

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[1] Anderson, John F., and Goldberger, Joseph: On the relation of Rocky Mountain spotted fever to the typhus fever of Mexico. A preliminary note. Public Health Reports, xxiv, Dec. 10, 1909, p. 1861.

Same. A note on the etiology of "tabardillo." the typhus fever of Mexico. Public Health Reports, xxiv, Dec. 24, 1909, p. 1941.

Same. On the infectivity of tabardillo or Mexican typhus for monkeys and studies on its mode of transmission. Public Health Reports, xxv, Feb. 4, 1910, p. 177.

Same. On the etiology of tabardillo or Mexican typhus. An experimental investigation, Journ. med. research, xxii, June, 1910, pp. 469–481.

[2] N.—New York series.

On the afternoon of the ninth day after inoculation, and the first day of fever, when the temperature of the animal was 41° C., monkey No. 158 was bled from the carotid artery for 50 c. c. This blood was defibrinated and a portion used for passage. Since then this infection has been carried through 11 monkey generations by inoculation of blood.

Since our case No. 1 we have seen two more cases of Brill's disease. With blood obtained from a case in the Jewish Hospital, Brooklyn, we have succeeded in infecting a rhesus monkey and effecting passage with the blood of that animal.

After intraperitoneal or intravenous inoculation there is an incubation period of 5 to 14 days. At the end of this time there is usually a rapid rise of the animal's temperature, which frequently reaches a maximum in 36 or 48 hours of 41° to 41.5° C.; the temperature remains between 40° and 41° C. until toward the end of the febrile period, when it may show a gradual decline, but almost invariably declines by crisis or rapid lysis, frequently to subnormal. After about the second day of fever the animal may show other evidences of illness, such as loss of appetite, ruffled fur, crouching posture in cage, loss of weight, and weakness. Convalescence is usually rapid. We have never noticed the presence of an eruption, although we have not searched very carefully for it. Occasionally one of a pair of animals may fail to develop the infection when inoculated with virulent blood, but on subsequent inoculation has invariably been found to be susceptible.

One attack of the infection has proved in every instance tested to have conferred immunity to infection by subsequent inoculation with virulent blood.

Having established the susceptibility of the rhesus monkey to infection by the inoculation with blood from a case of Brill's disease, it became important to determine the relationship of Brill's symptom complex to typhus fever. In order to clear up this question one of us (J. G.) proceeded to Mexico City, carrying a number of rhesus monkeys, some of which had recovered from infection with the virus obtained originally from our case No. 1 of Brill's disease, and others—fresh animals—to be used as controls.

On November 23, 1911, monkeys Nos. 95 and 133, which had recovered from an infection with the virus of Brill's disease, and control (normal) monkey No. 314, were each inoculated intravenously with 3 c. c. of defibrinated blood from rhesus No. 306. The latter animal was at this time in the third day of what appeared to have been a mild typhus reaction. During the succeeding 29 days rhesus No. 314 gave no evidence of a reaction.

On December 8, 15 days after the first inoculation, none of the three animals (Nos. 95, 133, and 314) having given any indication of a reaction, monkeys Nos. 95 and 133 were reinoculated with defibrinated blood from case No. 19–M,[1] a severe case of typhus in the sixth day of the disease (see chart No. 2). Two normal monkeys, Nos. 317 and 318, were similarly inoculated as controls. Each of these four animals was given 3.5 c. c. of the blood diluted with an equal volume of saline solution intraperitoneally.

Result.—Both control monkeys, Nos. 317 and 318, have given clear evidence of infection (see charts Nos. 3 and 4), whereas neither

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[1] M = Mexican series.

Nos. 95 nor 133 has given any indication of a reaction (see charts Nos. 5 and 6).

It might be suggested that the failure of monkeys Nos. 95 and 133 to react to the second typhus inoculation was due rather to a resistance conferred by the inoculation of November 23 with the blood of rhesus No. 306 than to an immunity following the attack of Brill's disease. That this is not the case, however, is evidenced by the fact that rhesus No. 314, originally inoculated as the control for Nos. 95 and 133 in their first test, made on November 23, has since reacted promptly and sharply following a second inoculation with blood from a human case of typhus.

In order to leave no room for doubt on this point we inoculated two other monkeys (Nos. 161 and 162) that had previously reacted to an inoculation with the virus of Brill's disease. On December 29, 1911, these two animals were inoculated intraperitoneally with 6 c. c. each of defibrinated blood from a well-marked case (case 35–M) in the ninth or tenth day diluted with an equal volume of saline solution. January 1, 1912, both these animals were reinoculated with defibrinated blood from another patient (case 39–M) in the ninth day of disease, each animal receiving 4 c. c. diluted with an equal volume of saline solution intraperitoneally. Neither animal has given evidence of a reaction, although two other monkeys (Nos. 304 and 324), inoculated in precisely the same way and on the same dates, have reacted promptly and sharply.

We believe, therefore, that the conclusion is justified that an attack of Brill's disease in the monkey confers an immunity to subsequent infection with Mexican typhus (tabardillo).

Monkeys Nos. 317 and 318, which had passed through an attack of Mexican typhus fever and which had served as controls in the immunity test above described, were tested for their immunity to infection derived originally from a case of Brill's disease. These two monkeys, as well as control, were given 3 c. c. of defibrinated blood from rhesus No. 187, then in the second day of an attack of Brill's disease.

Result.—The control monkey has given a definite reaction, while neither No. 317 nor No. 318 has given any indication of a reaction. It is, therefore, permissible to conclude that Nos. 317 and 318, as a result of their attack of Mexican typhus fever, are immune to infection with Brill's disease.

SUMMARY AND CONCLUSIONS.

1. The rhesus monkey is susceptible to infection by inoculation with the blood from a case of "Brill's disease."
2. One attack of the disease in the monkey induces a definite immunity to a subsequent infection with virulent blood of the same strain.
3. Monkeys recovered from an infection with "Brill's disease" have been found to be immune to a subsequent infection with virulent blood from a case of Mexican typhus fever.
4. Monkeys recovered from an infection with Mexican typhus fever have been found to be immune to a subsequent infection with "Brill's disease."

5. From the above results we conclude that the disease described by Brill is identical with the typhus fever of Mexico, and inasmuch as the New York strain is undoubtedly of European origin, we may also conclude that the typhus of Europe and the tabardillo of Mexico are identical.

6. If this conclusion is correct, typhus fever has been present in New York City for a number of years and, according to verbal reports made to us, has occurred in other large cities of the United States.

7. These results make the clinical recognition and study of typhus fever of increased importance and necessitate the exercise of appropriate prophylactic measures.

8. It is not intended to exaggerate the menace of this disease to the public health. Nevertheless, although the disease in New York City has apparently been mild and has shown little tendency to spread, it is apparently on the increase there, and the possibility should be borne in mind that it may acquire virulence and epidemic prevalence.

We desire to express our indebtedness and to extend our thanks to Dr. Nathan E. Brill and Dr. Leo Kessel, of New York; Dr. Hiram Olsan, house physician at Mount Sinai Hospital, New York; Dr. Leon Louria, Brooklyn; and to Dr. Ellis Campus, house physician at the Jewish Hospital, Brooklyn, for the privilege of seeing cases of "Brill's disease" and obtaining material therefrom, and for many other courtesies.

For the laboratory and clinical facilities freely extended to us in Mexico City we are deeply indebted to Dr. Eduardo Licéaga, president of the superior board of health; to Dr. Octaviano Gonzalez Fabella, director of the bacteriological laboratory; to Dr. Regino Gonzalez, director of the hospital general; and to Dr. German Diaz Lombardo, director of the Hospital Juarez. We are also under many obligations to Dr. A. R. Goodman, chief surgeon of the Mexican Railways, for numerous helpful courtesies. For their kind generosity in permitting us to study their cases our thanks are due to Drs. Miguel Otero and Zenón Luna.

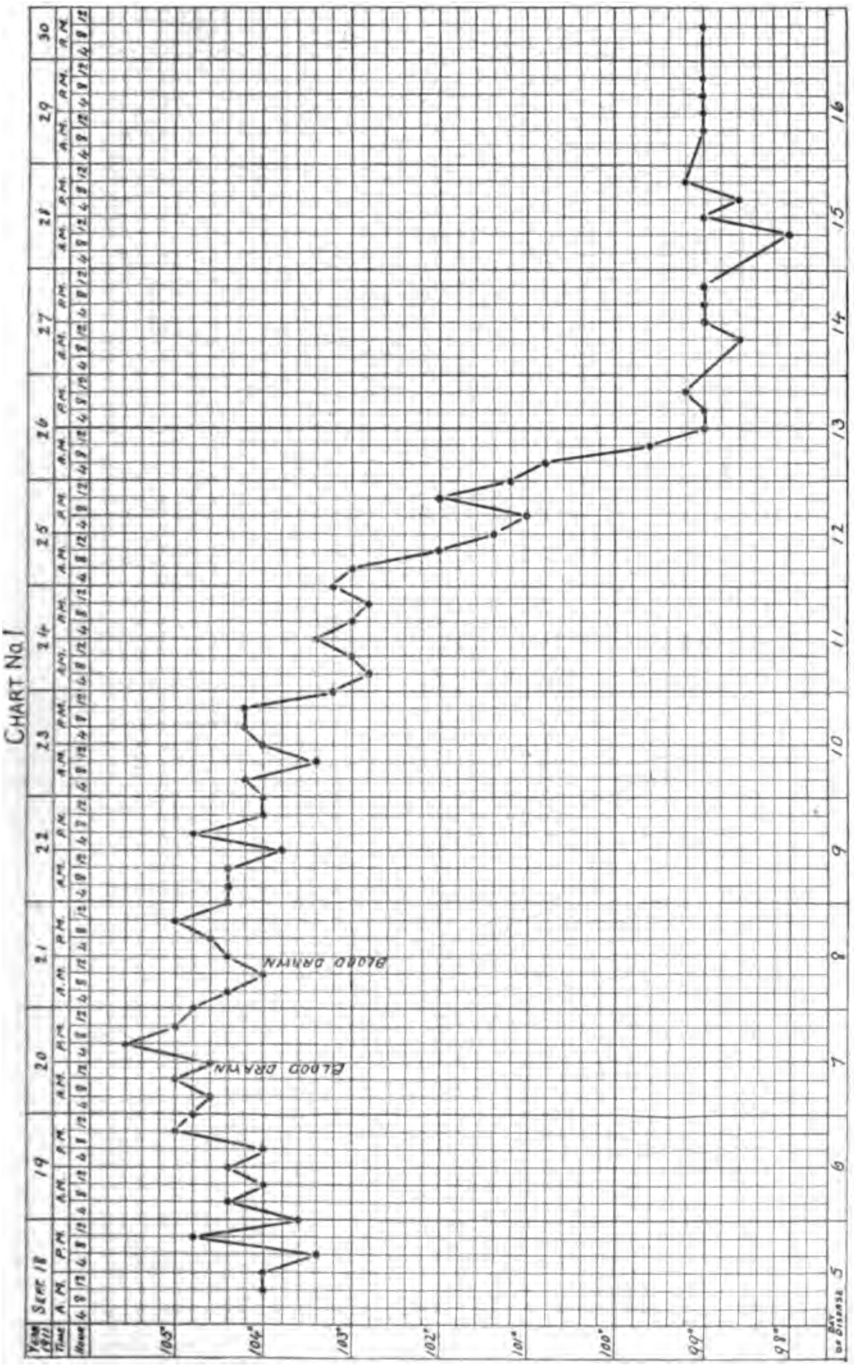

CHART NO. 1, SHOWING TEMPERATURE OF CASE NO. 1 OF "BRILL'S DISEASE."

CHART No. 2

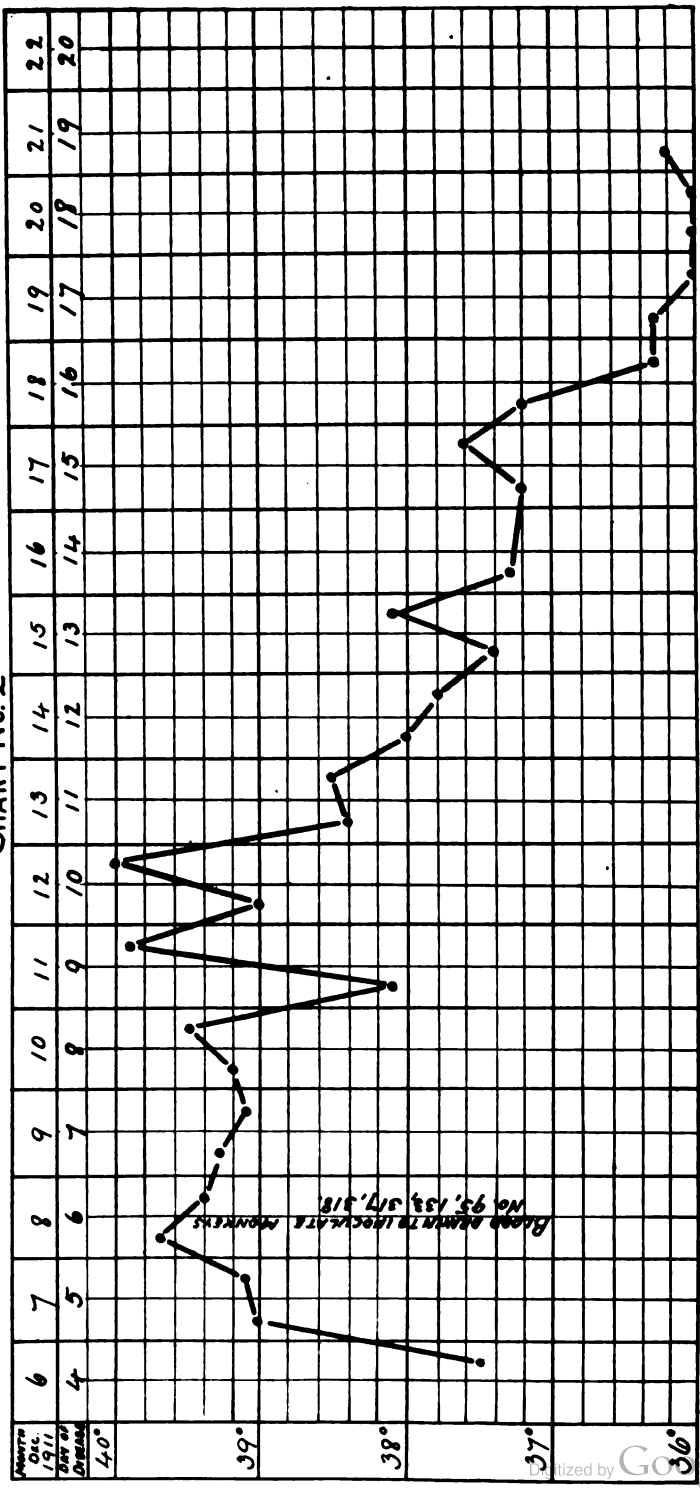

CHART NO. 2, SHOWING TEMPERATURE OF CASE NO. 19 OF TYPHUS FEVER.

CHART No. 3

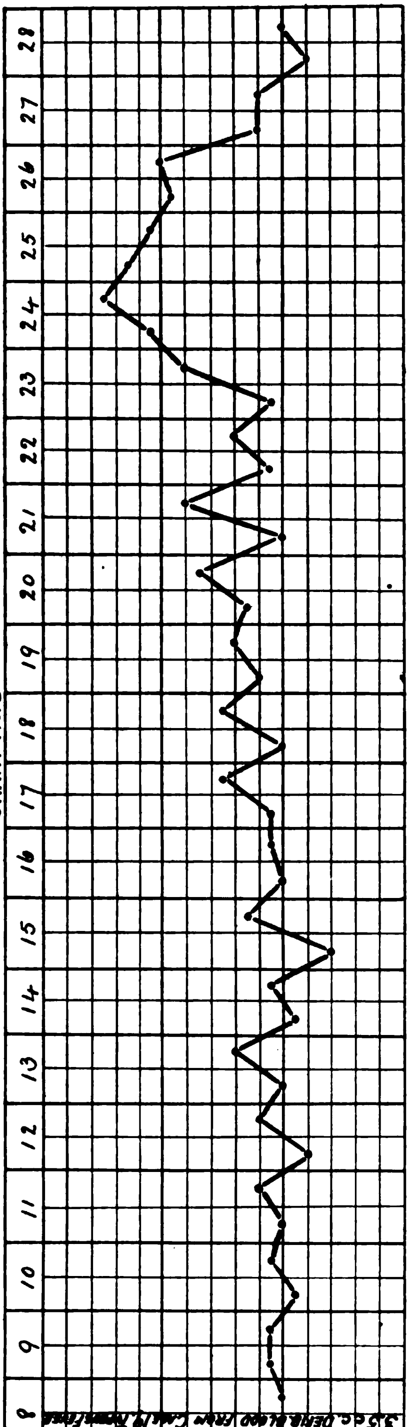

CHART NO. 3, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 317; SEE ALSO CHARTS NOS. 5 AND 6.

Chart No. 4

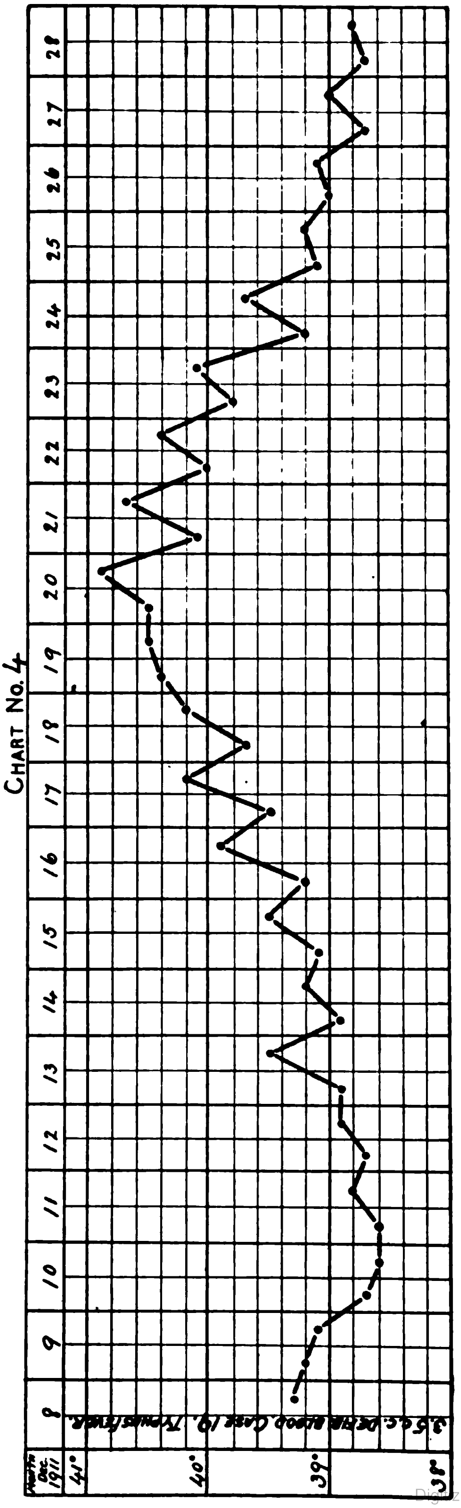

CHART NO. 4, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 318; SEE ALSO CHARTS NOS. 5 AND 6.

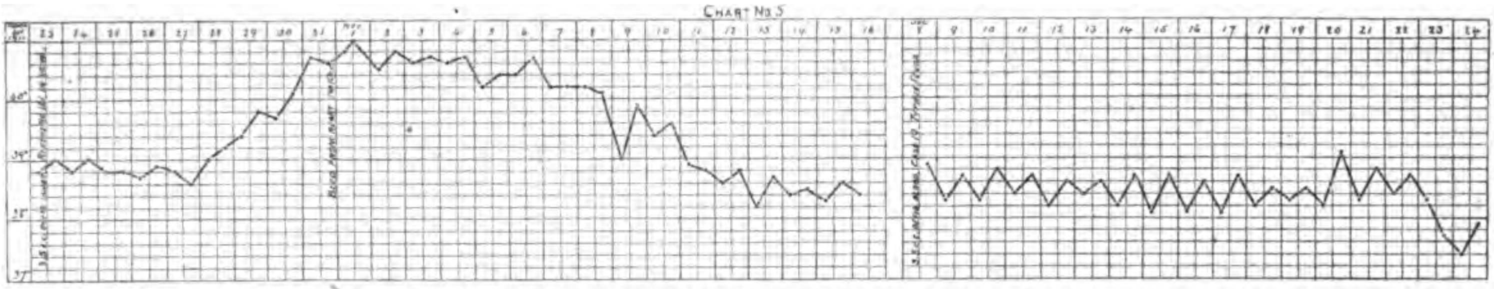

CHART NO. 5, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 95. THE CHART SHOWS THE TEMPERATURE CURVE DURING THE ATTACK OF "BRILL'S" DISEASE AND THE NEGATIVE REACTION FOLLOWING TEST OF IMMUNITY BY INJECTION OF BLOOD FROM TYPHUS FEVER CASE NO. 19; SEE ALSO CHARTS NOS. 3 AND 4.

CHART No. 4

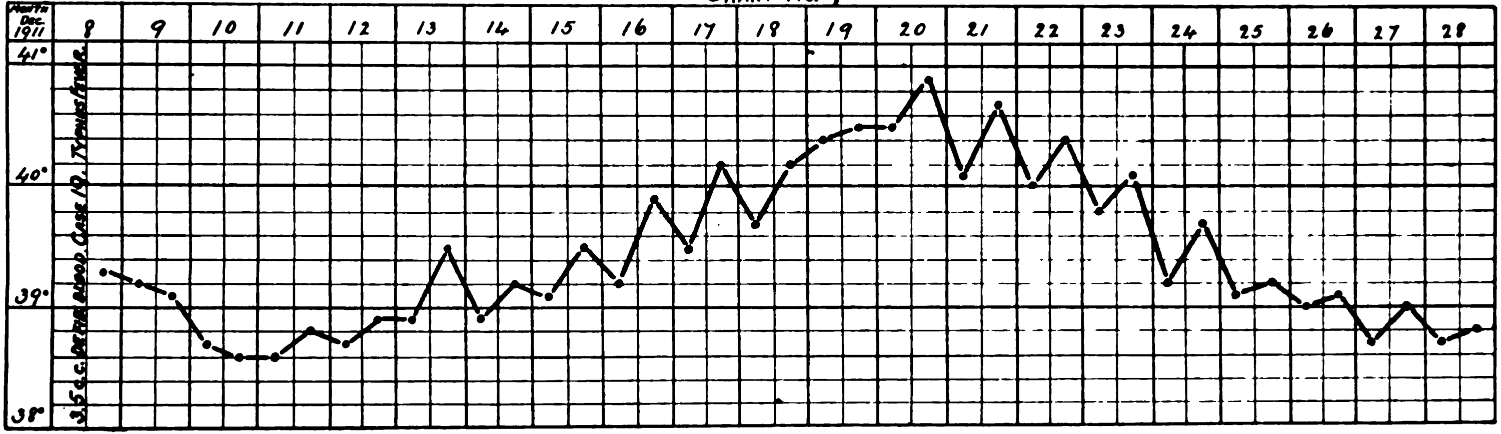

CHART NO. 4, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 318; SEE ALSO CHARTS NOS. 5 AND 6.

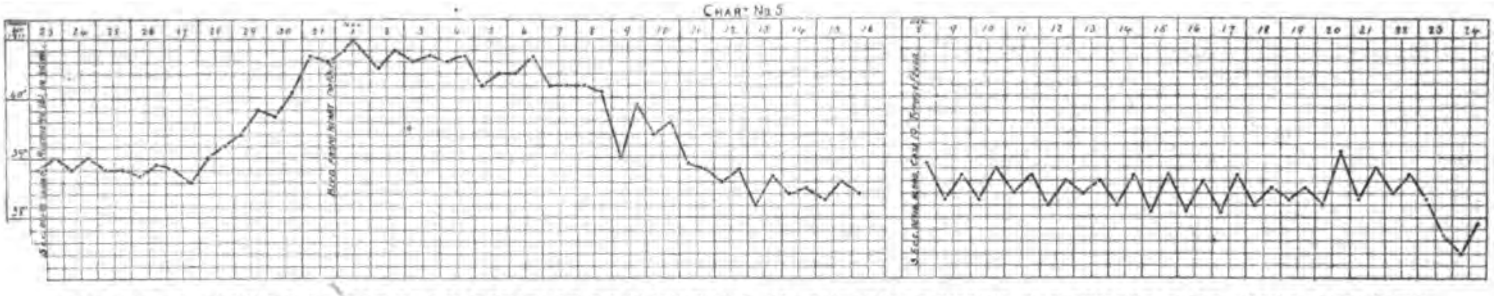

CHART NO. 5, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 95. THE CHART SHOWS THE TEMPERATURE CURVE DURING THE ATTACK OF "BRILL'S" DISEASE AND THE NEGATIVE REACTION FOLLOWING TEST OF IMMUNITY BY INJECTION OF BLOOD FROM TYPHUS FEVER CASE NO. 19; SEE ALSO CHARTS NOS. 3 AND 4.

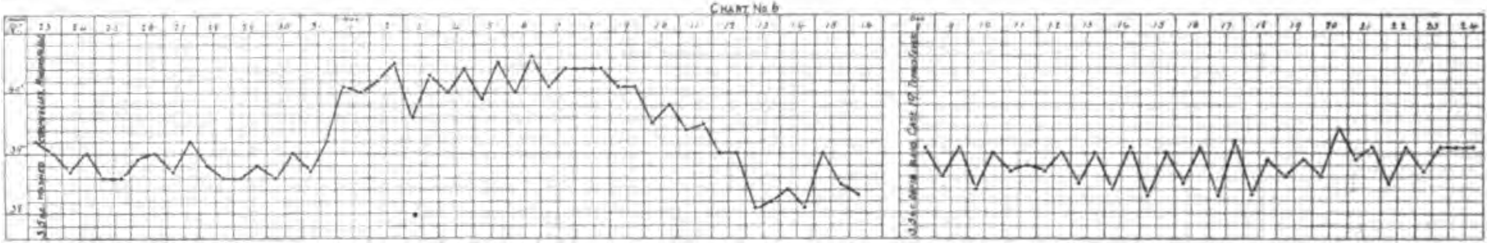

CHART NO. 6, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 133. THE CHART SHOWS THE TEMPERATURE CURVE DURING THE ATTACK OF "BRILL'S" DISEASE AND THE NEGATIVE REACTION FOLLOWING TEST OF IMMUNITY BY INJECTION OF BLOOD FROM TYPHUS FEVER CASE NO. 19; SEE ALSO CHARTS NOS. 3 AND 4.

AN ACID-FAST ORGANISM RESEMBLING THE BACILLUS OF HUMAN LEPROSY CULTIVATED FROM THE TISSUES OF A LEPROUS RAT.

By C. W. Chapin, Assistant Surgeon, Public Health and Marine-Hospital Service.

The writer has succeeded in isolating an acid-fast bacillus corresponding in general to the published characteristics of the bacillus of human leprosy from a contaminated culture from the tissues of a leprous rat.

The medium employed had the following composition:

	Per cent.
Egg yolk	1.0
Normal soda solution	.1
Glycerin	.5
Agar	2.0
Salt	.8

The ingredients, with the exception of the egg yolk, were dissolved and sterilized; the yolk was then incorporated, the medium was tubed and slanted, and after hardening was heated to 70° C. for one hour in the Arnold sterilizer for sterilization.

The culture was kept most of the time in the incubator at 37° C. for part of the time at room temperature, and transplanted about once a week. Upon making the original culture and at each transplantation the surface was moistened daily for two or three days with a 1 per cent solution of trypsin, previously sterilized by passing through a Berkefeld filter.

Under these conditions the acid-fast bacilli originally present in the tissue were replaced by morphological variants, sometimes long-curved forms, oftener short, oval, almost coccoid organisms. The acid-fast organism was isolated by plating upon the medium described above.

The growth is macroscopically dull, gray, brownish, or yellowish, depending upon the medium and length of incubation. It overgrows the surface of the condensation water and does not readily emulsify well. It grows fairly upon various modifications of the above medium without trypsin, better with it; less well upon peptone media. Upon bouillon it grows slowly as a scum overspreading the surface from which flocculent fragments separate and settle upon agitation.

Microscopically the organism is very polymorphous, depending upon the conditions of cultivation; some forms resembling the *Bacillus lepræ* as found in the tissues, some long and curved, some short or coccoid.

In the contaminated cultures of several other strains acid-fast morphological variants, presumably indicative of beginning reproductive activity, have appeared, and attempts are being made to isolate them in pure culture; also to obtain a strain uncontaminated at any time. Until this last has been accomplished, the observation must remain open to obvious criticism.

The acid-fast morphological variants have never been observed in a long series of attempts to grow the bacillus of rat leprosy in symbiosis with other bacteria without trypsin. Controls for sterility of the trypsin have usually remained sterile, and in no case have acid-fast organisms been found therein.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

SAGINAW, MICH.

ABATTOIRS—INSPECTION, PREPARATION, AND CARE OF MEAT AND MEAT PRODUCTS.

SEC. 1. Every abattoir or slaughterhouse or other place for the slaughter of animals, in operation, at which animals are slaughtered for purposes of being used for food, exhibited for sale as food or sold for use as food within the limits of the city of Saginaw, shall be constructed in accordance with the following provisions:

The same shall consist of a substantial and suitable building well lighted, containing a killing room, a chill room, a cold storage and refrigerating room, a reduction plant, and suitable pens, chutes, etc., commensurate therewith, together with all knives, tools, cleavers, etc.

The killing room shall be adequate in size, and floor of said killing room shall be of concrete not less than 3 inches thick connected with sewer by means of bell traps and duly equipped with water seals and constructed in such a manner as to secure perfect drainage; it shall be provided with hot and cold water, also tank for scalding animals, together with an ample supply of hose; it shall be provided with runways, windlasses, overhead trackage, and system of trolleys running from the killing rooms into and connecting with chill and cold-storage rooms, by which and upon which animals slaughtered can be raised, lowered, and carried from killing room to chill room and cold-storage rooms without handling same with hands; it shall be amply equipped with buckets, tubs, and other utensils and devices into which the blood, offal, and refuse shall be placed, and immediately removed to the reduction plant, without the necessity of handling with hands; the walls, ceiling, and partitions in said building and the floor of the same shall be constructed of material susceptible of a high degree of sanitation and easily kept so; and all apparatus, tools, knives, and cleavers, etc., used in or about said building shall be kept perfectly clean; said room shall be provided with cuspidors, toilets, towels, and soap for the use of employees working therein. The chill room shall be of adequate size; the walls, partitions, and ceiling of said room shall be thoroughly insulated with approved material and equipped in such a manner that all condensation shall take place above carcasses and be promptly trapped out of the building, thereby securing as far as practical dry refrigeration; said construction and equipment shall be such that the approximate temperature maintained shall be 40° F. It shall also be equipped with overhead trolleys and trackage, connected with the killing rooms and also with the cold storage or refrigerating rooms, and same shall be sufficient in height and capacity to permit all animals slaughtered to be hung from the trolleys, and no animal or portion of same shall be placed on the floor or permitted to rest thereon, and all animals or food products placed therein shall be handled with the hands as little as possible.

Cold-storage and refrigerating rooms shall be of adequate size, and shall be equipped with an adequate system of artificial lights; the walls, partitions, and ceiling of said room shall be thoroughly insulated with approved insulating material and constructed in such a manner as to produce dry refrigeration, and said construction and equipment shall be such that the approximate temperature to be maintained shall be 34° F. It shall also be connected with the killing room and chill room by overhead trackage and trolleys, which shall be sufficient in height, size, and capacity to permit all animals killed and stored thereon to be hung from trolley, and all animals slaughtered shall be suspended from said trolley and no portion of same placed on the floor; the walls, partitions, and floor shall be kept perfectly clean.

The reduction plant shall be of adequate size and equipped with vacuum pumps, engines, machinery, and reduction plant of sufficient size and capacity to dispose of all offal, blood, and residue resulting from the slaughtering of animals without odor, and the products taken from said plant shall be finished products; the rooms in which tankage and tallow are removed from the reduction plant shall be of adequate size, and floors shall be constructed of concrete not less than 3 inches thick and connected with sewer by means of bell traps and water seals, and shall be supplied with water services in such manner as to secure perfect drainage. The floors of the room in which refuse is handled and placed in reduction plant shall be constructed so as to be water tight, and shall be thoroughly treated with oil prior to its use, and shall be kept clean and in good sanitary condition, all offal and refuse from slaughtered animals to be reduced as soon as practical after same are slaughtered: *Provided*, That the construction of buildings according to this section shall not apply to abattoirs or slaughterhouses now doing business in the city of Saginaw until such abattoirs or slaughterhouses are in need of repairs, when they shall be repaired or rebuilt in accordance with this section: *Provided further*, That the inspector of foods and measures may order such minor changes in existing abattoirs or slaughterhouses under this section as he shall deem to be necessary and reasonable to insure cleanliness in the handling of meat or food products.

Sec. 2. Every abattoir or slaughterhouse where animals are slaughtered to be used as food, offered for sale, or sold for food within the limits of the city of Saginaw shall be located at such places as permitted by the ordinance of the city of Saginaw and as shall be easily accessible to the city inspector and shall be so located as to permit connection with the sewer system and water service.

Sec. 3. All abattoirs or slaughterhouses in which animals are slaughtered to be used as food, exhibited for sale, or sold for food in the city of Saginaw shall be operated in accordance with the following provisions:

(*a*) No animal intended for slaughter shall remain on the premises or premises immediately adjoining or adjacent thereto to exceed 24 hours, nor shall they be slaughtered while overheated.

(*b*) All animals intended to be slaughtered within the limits of the city of Saginaw shall be inspected while alive and on foot by the city inspector of foods and measures in pens specially constructed for that purpose which shall be well lighted, and all animals so inspected shall be slaughtered within a reasonable time thereafter, and no animal shall be slaughtered that is not "passed" by the said city inspector of foods and measures.

(*c*) Every animal slaughtered shall be inspected during the process of slaughtering by the said city inspector of foods and measures, who shall use such methods of inspection as may be approved of or adopted by the common council.

(*d*) Every portion of any animal slaughtered or intended for food or a food product shall be inspected by the city inspector of foods and measures and tagged, marked, or stamped by him, and a record of said inspection with the name of owner, kind of animal, and condition shall be made by said city inspector of foods and measures, which record of each inspection shall be entered upon his daily report which shall be filed with the city clerk.

(*e*) The offal, blood, and refuse from slaughtered animals and animals or portions thereof condemned upon dead inspection by the inspector of foods and measures shall be immediately placed in the reduction plant and destroyed under the direction of said inspector.

(*f*) All trucks, traps, and other receptacles, all chutes, platforms, racks, tables, etc., and all knives, saws, cleavers, and other tools, and all utensils, machinery, and articles used in moving, handling, cutting, chopping, or other process shall be thoroughly cleaned before using.

(*g*) All employees shall be examined by the city physician of the city of Saginaw at the expense of the employer at a price not to exceed $1 per examination; and no person affected with tuberculosis or any other communicable disease shall be employed in any of the departments where carcasses are dressed, meat is handled, or meat food products are prepared, and all employees shall be examined when directed by the city inspector of foods and measures by the city physician, who shall report their condition to the inspector and manager of abattoir or slaughterhouse.

(*h*) All employees must be cleanly. The said inspector shall see that the clothing and hands of such employees are clean and sanitary, and they shall be required to change or clean same at any time he may so request.

(*i*) No employees or other person shall be permitted to expectorate on the floor, and proper cuspidors which will not readily upset shall be provided for employees in each room and shall be kept thoroughly clean and sanitary.

(*j*) Water-closets and toilet rooms shall be required for employees, and such rooms shall be entirely separated from compartments in which carcasses are dressed or meat food products are stored, placed, handled, or prepared. Such closets, etc., shall be conveniently located, sufficient in number, and shall be kept in sanitary condition. Convenient and sanitary urinals and washstands shall be provided.

(*k*) The rooms in which meat or meat food products are prepared, stored, packed, or otherwise handled shall be free of odors from toilet rooms, catch basins, tank rooms, etc., and shall be kept free from flies and other vermin by screening or other methods.

(*l*) Butchers who dress or handle diseased carcasses or parts shall cleanse their hands of all grease and then immerse them in a prescribed disinfectant and rinse them in clear water before dressing or handling carcasses. All butcher's implements used in dressing diseased carcasses shall be sterilized either in boiling water or by immersion in a prescribed disinfectant followed by rinsing in clear water, and facilities for same shall be provided.

(*m*) Meat and food products must not be permitted to fall on floors and, in event of their having fallen, they must be condemned or soiled portion removed or condemned.

(*n*) Carcasses shall not be inflated with air from the mouth, and no inflation except by mechanical means shall be allowed. Carcasses shall not be dressed with skewers, knives, etc., that have been held in the mouth. Spitting on whetstones or steels when sharpening knives is prohibited.

(*o*) Only good, clean water shall be used in the preparation of carcasses, parts of meat or meat food products, etc.

(*p*) Where an animal is condemned by the inspector after being slaughtered, the same shall be immediately rendered in the reduction plant, and notice to that effect given to owner, who shall be paid by the abattoir or those conducting same the value of the tankage and tallow less expenses for rendering same.

(*q*) Each animal that is slaughtered shall be required to remain in the chill and refrigerating room at least 12 hours before same is delivered to owner or used for food or offered for sale as food.

(*r*) Wagons in which meat or meat food products are delivered shall be constructed and covered so that the contents shall be kept clean.

(*s*) The manager of all abattoirs and slaughterhouses shall notify the said city inspector of foods and measures in ample time to enable him to prepare for and make an inspection.

(*t*) It shall be the duty of the city inspector to see that all the provisions of this section are duly observed.

SEC. 4. From and after 90 days from the time this ordinance shall become operative, no meat or meat product used for food which has been slaughtered or manufactured by any person or at any packing house, abattoir, or slaughterhouse shall be sold or offered for sale for food in the city of Saginaw, unless the same shall have been passed by the United States Government inspection, or slaughtered or manufactured under the regulations and conditions prescribed in this ordinance.

SEC. 5. The provisions of this ordinance with reference to the equipment, management, and operation of abattoirs and slaughterhouses shall apply to all abattoirs or slaughterhouses now in construction or in operation, or that may hereafter be constructed or operated, and from and after 90 days from the time this ordinance shall become operative it shall be unlawful for any person, firm, corporation, association, butcher, vendor of meat, or any other person to have any animal slaughtered to be used as food or exhibited for sale as food or sold for food within the limits of the city of Saginaw at any abattoir or slaughterhouse not equipped, managed, and operated in accordance with the provisions of this ordinance.

SEC. 6. From and after 90 days from the time this ordinance shall become operative, it shall be unlawful for any person, firm, corporation, association, butcher, or any other person to erect, establish, maintain, or operate any abattoir or slaughterhouse where animals are slaughtered to be used as food or offered for sale or sold for food within the limits of the city of Saginaw, which abattoir or slaughterhouse is not constructed, maintained, and operated in accordance with all of the provisions of this ordinance.

SEC. 7. From and after 90 days from the time this ordinance shall become operative, is shall be unlawful for any person, firm, or corporation, association, vendor of meats, or any other persons to offer for sale or sell for use as food within the limits of the city of Saginaw any animal or any portion of same which has not been slaughtered at an abattoir or slaughterhouse maintained and operated under the provisions of this ordinance, except that which has been inspected by the United States Government.

SEC. 8. From and after 90 days from the time this ordinance shall become operative, it shall be unlawful for any hotel keeper, restaurant keeper, boarding-house keeper, to use as food or offer or sell to others as food any animal or portion of same not inspected by said inspector of foods and measures, slaughtered at any abattoir or slaughterhouse maintained and operated under the provisions of this ordinance, except that which has been inspected by the United States Government.

SEC. 9. The said city inspector of foods and measures shall be paid and receive from the owner of any abattoir or slaughterhouse operating under and by virtue of the provisions of this ordinance as fees for inspection of animals slaughtered, the sum of 5 cents for each animal by him inspected. Said inspector of foods and measures shall keep an accurate account of all animals by him inspected, and shall file weekly reports in the office of the clerk of the city of Saginaw, showing the number and kind of animals by him inspected and the number and kind by him accepted and rejected. He shall turn over weekly to the city treasurer all fees by him collected for such inspection, which said fees shall belong to the city of Saginaw.

SEC. 10. Any violation of the provisions of this ordinance shall be punished by a fine to be imposed upon the offender when duly convicted thereof, not exceeding $100, and in the imposition of such fine and cost the court may make a further sentence that in default of the payment of such fine and cost the offender be imprisoned in the city prison of said city or the county jail of the county of Saginaw for any period of time not exceeding 90 days. And each day any person or persons shall violate any provisions of this ordinance shall be deemed a separate offense.

SEC. 11. All ordinances or parts of ordinances of the city of Saginaw inconsistent with this ordinance are hereby repealed: *Provided*, That nothing in this ordinance shall be construed to prevent any farmer from killing, dressing, or selling in the open market, unless diseased, any animal or fowl intended for food that he has raised, fed, or slaughtered. [Ordinance adopted July 17, 1911.]

SAN DIEGO, CAL.

ABATTOIRS—INSPECTION, PREPARATION, AND CARE OF MEAT AND MEAT PRODUCTS.

SEC. 1. There is hereby created the office of meat inspector of the city of San Diego This inspector shall be a competent, regular veterinary.

He shall be appointed by the board of health of said city, subject to the approval and confirmation of the common council, and his salary shall be $125 per month. His duties shall be:

First, to inspect all cattle, hogs, sheep, goats, and other animals intended for slaughter for human consumption within this city, and at such other places as are designated by the said board of health, both before, during, and after slaughter, and all animals, poultry, game, fish, and their products kept or exposed for sale for human consumption in said city of San Diego.

Second, to stamp carcasses of all slaughtered animals according to regulations laid down by the United States Government, order 137, Bureau of Animal Industry.

Third, he shall make such disposition of diseased meats and animals as is required by the United States Government, order 137, Bureau of Animal Industry.

Fourth, to inspect all buildings erected, converted, or used as slaughterhouses, to determine that they are adequately ventilated and in all other ways conform to the provisions of this ordinance.

Fifth, to inspect all stores, shops, markets, and other premises where such meats and products are kept for sale and see that such meats and products are in sanitary condition.

Sixth, to see that no carcasses are offered for sale for human consumption within said city of San Diego without carrying a United States Government inspector's stamp or that of the inspector of the city of San Diego or other duly authorized inspector.

Seventh, whenever any meat, game, fish, poultry, or the products thereof upon inspection and examination be found to be unwholesome or corrupted from any cause or infected with any form of disease, said inspector shall condemn the same as unfit for human food, and shall mark, mutilate, or make the fact of such condemnation and unfitness apparent, and shall treat it in accordance with regulation 18, governing meat inspection, of the United States Department of Agriculture.

Eighth, to inspect dairies and dairy cattle whose products are offered for sale in the said city and to determine and exclude such cattle as are diseased or dangerous in such a way as to render their products unfit for human consumption; to inspect all stores, dairies, and depots where milk and dairy products are kept for sale and to see that such premises and dairy products are in a sanitary condition.

SEC. 2. It shall be unlawful for any person, either as owner, agent, or employee, to sell, have, keep, or expose for sale for human food, or to have in his possession, the flesh of any cow, ox, calf, sheep, swine, or goat, for the purpose of sale, unless the same shall have been slaughtered under the supervision of a United States Government inspector, in accordance with the regulations relating to the inspection of meat, as prescribed by the Department of Agriculture of the United States, or a meat inspector of the city of San Diego, or any other authorized agent, in accordance with the provisions of this ordinance, and unless there has been placed on each primal part thereof, by and under the personal supervision of an inspector of the United States or of the city of San Diego, a mark, stamp, or brand, showing that the same has been inspected and passed for food purposes by such United States inspector or such meat inspector of the city of San Diego, or other authorized inspector, and having the words, "San Diego City, Inspected and Passed," together with the number of the slaughterhouse, as hereinafter provided, in which the same was inspected.

Sec. 3. Any person, firm, or corporation desiring to slaughter in the city of San Diego any of the animals mentioned in section 1 hereof, for use for food purposes in the city of San Diego, shall before engaging in such business make application in writing to the board of health of the city of San Diego for a permit to do so, which application shall be signed by the person, firm, or corporation making the same, and shall specify the location of the house or place where it is proposed to slaughter such animals. Upon the filing of such application with the said board of health, the said inspector shall inspect said slaughterhouse, and if the same shall be found to comply with the provisions of this ordinance relative to construction and equipment of slaughterhouses, he shall issue a temporary permit and make a written report thereof to the board of health at its next meeting, whereupon said board shall issue the permit applied for and cause a record thereof to be kept in the health office. But if said place shall not be in strict accordance with the requirements of this ordinance, then such permit shall be withheld.

Sec. 4. No permit shall be issued to any person, firm, or corporation to engage in the business of slaughtering animals within or without the city limits of the city of San Diego for use for food purposes in the city of San Diego unless the house or place in which the same are to be slaughtered shall conform strictly to the following regulations:

The floor or floors of the slaughter rooms shall be constructed of cement, tile, or stone, and made water tight, and all such floors shall be constructed on an incline to provide adequate drainage toward a gutter, which shall be so constructed with the same as to drain the same to a tub or reservoir, which said tub or reservoir shall be placed to receive blood or offal. Said tub or reservoir shall be emptied or cleaned at the end of each day upon which killing has been done in such a manner that no offensive odor shall emanate from the same. The walls of the killing, meat dressing, and cooling rooms shall be covered to the height of 6 feet with some nonabsorbent material and made water tight.

The blood and offal shall be handled and disposed of in such a manner as not to permit decay or offensive effluvia to emanate therefrom while in or near the slaughterhouse.

All waste water or other fluids from the building or slaughterhouse shall be conducted by means of good and efficient pipes or cement gutters to a cooling or settling tank, where the same shall be cooled and all grease removed therefrom before the said waste water or fluids shall be permitted to enter a city sewer.

Each slaughterhouse shall be provided with a cooling room apart from the killing room, which shall be placed not less than 20 feet from the place where the slaughtering is done, and separated from the killing room by a tight partition in the side or sides next or nearest to the killing room.

The cooling room shall be thoroughly ventilated and well screened so as to exclude flies and other insects therefrom.

Sec. 5. In order to obtain inspection by the city of San Diego the person, firm, or corporation operating any slaughterhouse where cattle, calves, sheep, swine, or goats are to be slaughtered, and the flesh thereof is to be supplied for the use of the inhabitants of the city of San Diego for food, shall make written application therefor to the board of health of said city, and said inspection shall be granted upon the following conditions:

That the said slaughterhouse has been constructed in accordance with the provisions of this ordinance.

That all slaughtering shall take place between the hours of 7 o'clock a. m. and 7 o'clock p. m. of any one day, unless a special permit in writing authorizing slaughtering at another time is granted by the board of health.

Sec. 6. Any person, firm, or corporation desiring to slaughter any animal mentioned in this ordinance, the flesh or meat of which is to be disposed of for food in the city of San Diego, shall give notice to the inspector of said city at least 12 hours before such slaughtering is to take place, that the services of the inspector thereof will be required. *Provided*, The person in charge of the slaughtering may notify the inspector at the close of each day at what time on the following day the work of slaughtering will be commenced, and if no slaughtering is to be done on the day following, then he shall notify the inspector at what time, and on what succeeding day the work of slaughtering will be next commenced.

Sec. 7. If inspection is granted by the board of health as provided in this ordinance, the said board of health shall designate each slaughterhouse so inspected by a number, which number shall be used on the mark, stamp, or brand of all meats inspected therein.

SEC. 8. The carcasses of calves, over 4 weeks of age, which have had no inspection previous to being brought into the city, will be admitted, provided such carcasses have the head and all the viscera, except the stomach, urinary bladder, and intestines, held by their natural attachments. On being brought to the place of sale, application shall be made to the city inspector for their inspection, and if found to be free from disease and otherwise sound, healthful, and wholesome, and fit for human food, they shall be marked by the said city inspector in the manner as previously provided, and admitted for sale. If found to be diseased, unsound, unhealthful, unwholesome, or otherwise unfit for human food, they shall be condemned as previously provided by this ordinance.

SEC. 9. No hog or other animal intended for human consumption in the city of San Diego shall be fed on garbage. Such hogs or other animals may, however, be fed on swill. Swill is defined as kitchen or table waste, edible products, not more than 12 hours old, and which has not undergone fermentation. Garbage is kitchen or table waste, edible products, more than 12 hours old.

SEC. 10. It shall be unlawful for any person, firm, or corporation, except the meat inspectors herein provided for, and the health officer, to have in possession, keep, or use any mark, stamp, or brand provided or used for stamping, marking, or branding any article herein required to be stamped, marked, or branded, or to keep, make, or use any mark, stamp, or brand having thereon a device or words similar in character or import to the marks, stamps, or brands provided or used for marking, stamping, or branding such articles.

SEC. 11. Regulation 20. Carcasses of animals not inspected ante mortem.

Carcasses of animals which have had no ante mortem inspection by inspectors of the Bureau of Animal Industry, the city inspector, or other authorized inspector, will not, except as herein provided, be admitted into an official establishment. The exception to this rule applies only to carcasses to which the head and all viscera, except the stomach, bladder, and intestines, are held by the natural attachments. Such carcasses, if offered for admission into official establishments, shall be inspected, and if found to be free from disease, and otherwise sound, healthful, wholesome, and fit for human food, they shall be marked "Inspected and passed" and admitted. If found to be diseased, unsound, unhealthful, unwholesome, or otherwise unfit for human food, they shall be marked "Inspected and condemned," and they shall be disposed of as required by the United States Government Order 137, Bureau of Animal Industry.

SEC. 12. That every slaughterhouse shall keep in a conspicuous position a copy of the regulations governing slaughterhouses.

SEC. 13. Every person, firm, or corporation violating any provision of this ordinance shall be guilty of a misdemeanor, and upon conviction thereof, shall be punishable by a fine of not less than $10, nor more than $200, or by imprisonment in the city jail for a period of not less than 10 nor more than 100 days, or by both such fine and imprisonment.

SEC. 14. This is an ordinance for the immediate preservation of the public peace, health, and safety, and one of urgency, and shall take effect from and after its passage and approval.—[Ordinance adopted Aug. 18, 1911.]

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 2,633 acres of land in Alameda County were covered with poison during the week ended January 13, 1912.

During the same period 4,700 acres of land in San Joaquin County and 5,300 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Jan. 13, 1912	6	[1] 138	75	
Fresno	do		[2] 92	92	
Oakland	do	9	[3] 590	486	
San Francisco	do	14	[4] 1,484	1,121	
Counties—					
San Joaquin	do		[5] 154	154	
Santa Clara	do		[6] 61	61	
Washington:					
City—					
Seattle	do		1,315	1,264	

[1] Identified: Mus norvegicus, 86; Mus musculus, 52.

[2] Identified: Mus norvegicus, 0; Mus alexandrinus, 57; Mus musculus, 18; unidentified, 15; Mus rattus, 2.

[3] Identified: Mus novegicus, 504; Mus musculus, 86.

[4] Identified: Mus norvegicus, 674; Mus rattus, 189; Mus musculus, 350; Mus alexandrinus 271.

[5] Identified: Mus norvegicus, 141: Mus alexandrinus, 7; Mus musculus, 6.

[6] Identified: Mus norvegicus, 61.

SQUIRRELS COLLECTED.

During the week under report 3 squirrels were found dead in Alameda County, Cal.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the States authorities.

REPORTS RECEIVED DURING WEEK ENDED FEB. 2, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
California:				
County—				
Riverside	Dec. 1-30	2		In addition to cases for December reported on p. 130.
Florida:				
Counties—				
Columbia	Jan. 7-20	19		
Duval	do	45		
Levy	Jan. 7-13	2		
Orange	Jan. 14-20	1		
Volusia	do	1		
Total for State		68		
Indiana:				
Counties—				
Adams	Dec. 1-31	75		
Bartholomew	do	3		
Cass	do	1		
Dearborn	do	13		
Delaware	do	1		
Howard	do	5		
Ohio	do	7		
Randolph	do	1		
Scott	do	4		
Vanderburg	do	1		
Vigo	do	2		
Total for State		113		
Minnesota:				
Counties—				
Becker	Nov. 28-Jan. 1	5		
Clay	Dec. 19-25	1		
Dodge	Nov. 28-Dec. 25	8		
Faribault	Dec. 19-25	1		
Fillmore	Dec. 12-25	2		
Hennepin	Dec. 12-Jan. 1	19		
Houston	Dec. 19-25	1		
Lac qui Parle	Dec. 12-25	11		
Martin	do	2		
Norman	Dec. 12-18	1		
Pipestone	Dec. 26-Jan. 1	1		
Ramsey	Nov. 27-Jan. 1	96		
Rice	do	7		
St. Louis	Dec. 12-18	31		
Scott	Dec. 12-Jan. 1	4		
Swift	Dec. 5-Jan. 1	5		
Watonwan	do	21		
Wright	Dec. 12-18	7		
Total for State		223		
Montana:				
Counties—				
Cascade	Dec. 1-31	10		
Chouteau	do	1		
Custer	do	4		
Missoula	do	9		
Sanders	do	5		
Silverbow	do	1		
Total for State		30		
***Nebraska:**				
Omaha	Jan. 14-20	4		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended Feb. 2, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
New York:				
Counties—				
Broome	Dec. 1-31	2		
Cattaraugus	do	38		
Cortland	do	30		
Erie	do	3		
Genesee	do	6		
Monroe	do	3		
New York	do	8		
Tioga	do	48		
Tompkins	do	18		
Wyoming	do	10		
Total for State		166		
Oregon:				
Counties—				
Baker	Nov. 1-30	4		
Benton	do	3		
Douglas	do	5		
Lane	do	2		
Lincoln	do	12		
Linn	do	1		
Total for State		27		
Benton	Dec. 1-31	24		
Lane	do	8		
Lincoln	do	13		
Linn	do	1		
Marion	do	26		
Umatilla	do	6		
		1		
Total for State		79		
***Tennessee:**				
Knoxville	Jan. 14-20	1		
Texas	Nov. 1-30		24	Report of cases in the State incomplete.
Counties—				
El Paso	Dec. 1-31		1	
Guadalupe	do	4	1	
Hale	do	1		
Hidalgo	do	22		
Uvalde	do	4	2	
Wichita	do	13		
Total for State		44	28	
Grand total for the United States.		757	28	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED JAN. 13, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	225	18	2	12		23	1			38	36	10	4
Boston, Mass	670,585	229	39	3	68	1	24				61	25	6	3
Chicago, Ill	2,185,283	769	153	19	84	4	119	7			170	73	19	2
Cleveland, Ohio	560,663	146	25	3	43	1	28	4			38	17	5	2
New York, N. Y	4,766,883	1,455	266	27	560	11	207	12	1		420	165	72	6
Philadelphia, Pa	1,549,008	573	91	14	6		28	1			99	67	106	11
Pittsburgh, Pa	533,905	190	32	4	9	1	28	1			32	1	13	4
St. Louis, Mo	687,029	261	22	2	8		9	2			44	25	8	
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	163	24	5	5		20				12	11	7	3
Cincinnati, Ohio	364,463	135	15	4	1		20	2			36	17	4	
Detroit, Mich	465,766	170	25	2			40	2	7					
Los Angeles, Cal	319,198	105	14		1		13		12		24	14	2	2
Milwaukee, Wis	373,857	121	9	1	56	2	18	2			42	8	53	3
Newark, N. J	347,469	108	19	3		1	20				25	16	1	
New Orleans, La	339,075	141	3		1		15	1	3		17	18	3	1
San Francisco, Cal	416,912	157	9	2	192	4	13				37	18	4	3
Washington, D. C	331,069	113	9	1	2		10				20	10	5	4
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	70	14	1	3		7		4			12		
Kansas City, Mo	248,381	23	10		1		2				2	4	2	
Providence, R. I	224,326	77	16		16	1	11					9	2	
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	27	2				2				1	1		
Cambridge, Mass	104,839	21	10		1		3				4	2		
Columbus, Ohio	181,548	61	4		21		25		1		1	6		
Dayton, Ohio	116,577	28	5	1	2		1				1	1	1	
Fall River, Mass	119,295	41	2	2			1				4	4		
Grand Rapids, Mich	112,571	37	1				4				1	2	4	
Lowell, Mass	106,294	45	2	1	16		7				5	5	2	
Nashville, Tenn	110,364	44	2		2		4				4	5		1
Oakland, Cal	150,174	37	2		1		7						6	1
Omaha, Nebr	124,096	39		2			2				1	5		
Spokane, Wash	104,402		3		18	1	3		12					
Toledo, Ohio	168,497	60	14	3	7		6		1			9	1	2
Worcester, Mass	145,986	49	4		3		13				2	5	2	
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	5	3				4				1			
Bayonne, N. J	55,545		3		10		7				1			
Brockton, Mass	56,878	20	1		26		4				3	1		
Camden, N. J	94,538		5	1			6				3			
Duluth, Minn	78,466	23	1				1		1		2	2		1
Elizabeth, N. J	73,409	24	1		5		5	1			2	2		
Erie, Pa	66,525	22	5		2		2				5	2	3	
Evansville, Ind	69,647	17										2		
Harrisburg, Pa	64,186	17	2								5	1	1	
Hoboken, N. J	70,324		6	2			1				3		1	
Houston, Tex	78,800	28	2	1			3					1		1
Johnstown, Pa	55,482	21	1		3		5					2		
Kansas City, Kans	82,331						1		2		2			
Lawrence, Mass	85,892	24	3		1	1	1					1	2	
Lynn, Mass	89,336	21	2		3		6				4			
Manchester, N. H	70,063	19			15	1	2				1	1		
New Bedford, Mass	96,652	37	4		2	1	3				2	2	1	1
Oklahoma City, Okla	64,205	13	3	1	1				1			3		
Passaic, N. J	54,773	24			1		3				2	1		

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 13, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Pawtucket, R. I.	51,622			1										1
Peoria, Ill.	66,950	28	3									3	1	1
Reading, Pa.	96,071	25	14	3			3		8					
St. Joseph, Mo.	77,403	14					1						2	1
San Antonio, Tex.	96,614	47	1		8		5					8	1	
Schenectady, N. Y.	72,826	30	3		1		3				4	4		
South Bend, Ind.	53,684	22	2								1	1	10	
Springfield, Ill.	51,678	18	2	1			2					1		
Springfield, Mass.	88,926	35			45		6				1	2		
Terre Haute, Ind.	58,157		3				5					1		
Trenton, N. J.	96,815	32									6	2	2	1
Wichita, Kans.	52,450		1				1				7	1		
Wilkes-Barre, Pa.	67,105	24	8		292	1					2	1		
Wilmington, Del.	87,411	35										1		
Yonkers, N. Y.	79,803	16	4	1	5		12				5			1
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J.	46,150	16	4	1										
Auburn, N. Y.	34,668	10			1						2			1
Aurora, Ill.	29,807	12	3	1					1			2		
Berkeley, Cal.	40,434	12											1	
Binghamton, N. Y.	48,443	12			1						2	2		
Brookline, Mass.	27,792	10	8		1		1						1	
Butte, Mont.	39,165	20	2		1		3					3		
Chattanooga, Tenn.	44,604		1				1				1		1	
Chelsea, Mass.	32,452	18	1	1	5		1					1		1
Chicopee, Mass.	25,401	9	2		1							2		
Danville, Ill.	27,871	13	3									1		1
Dubuque, Iowa.	38,494	12	2									1		
East Orange, N. J.	34,371	9	1				3							
Elmira, N. Y.	37,176	8	2				1						1	
El Paso, Tex.	39,279	30					5	1	1		3	6	1	1
Everett, Mass.	33,484	4	2				5							
Haverhill, Mass.	44,115	15	1	1	8						4	1		
Kalamazoo, Mich.	39,437	17	1								2	1		
Knoxville, Tenn.	36,346	15	1			1			1					
La Crosse, Wis.	30,417		1									2		
Lancaster, Pa.	47,227		4	1		1	3				3			
Lexington, Ky.	35,099	13	4		23							3		
Lynchburg, Va.	29,494	7			3		3				2		2	
Montgomery, Ala.	38,136	16	2				2				2			
Mount Vernon, N. Y.	30,919		4		25								2	
Newcastle, Pa.	36,280		1		1		1						1	
Newport, Ky.	30,309	5	3	1			1							
Newton, Mass.	39,806	10			1		2				2			
Niagara Falls, N. Y.	30,445	17	10		1		1						2	1
Norristown, Pa.	27,875	11	2		10									
Orange, N. J.	29,630	13	2				4				3	1		
Pasadena, Cal.	30,291	16										3		
Pittsfield, Mass.	32,121	12					1				1	2		
Portsmouth, Va.	33,190	11	5				1							
Racine, Wis.	38,002	7	3				2	1					2	1
Roakoke, Va.	34,874	13	3		23							2	2	
Roonford, Ill.	45,401	12	1				1							
Salem, Mass.	43,697	10												
San Diego, Cal.	39,578	4	2					1					4	1
Superior, Wis.	40,384	12	1						3			1		1
Taunton, Mass.	34,259	17										2		
Waltham, Mass.	27,834	11			6		1					1		
West Hoboken, N. J.	35,403	12	5	1			1				2	2		
Wheeling, W. Va.	41,641	11	4								4		3	
Wilmington, N. C.	25,748	11					1		2			2		
York, Pa.	44,750		6	1							2			
Zanesville, Ohio.	28,026	8	4				1						5	

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 13, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	14			1									
Beaver Falls, Pa	12,191						1				1		4	
Bennington, Vt		3	1										1	
Braddock, Pa	19,957	7	2		1							1		
Butler, Pa	20,782	8		1										
Cambridge, Ohio	11,327	3			4									
Carbondale, Pa	17,040	5					4							
Clinton, Mass	13,075	4	1								1	1		
Coffeyville, Kans	12,687												2	
Columbus, Ind		1							2			1		
Concord, N. H	21,497	12	1		1									
Cumberland, Md	21,839	9	1				1				2	1	8	1
Dunkirk, N. Y		1					1							
Galesburg, Ill	22,089	9												1
Gloucester, Mass	24,398	10												
Harrison, N. J	14,498	3												
Kearny, N. J	18,659	8	2		2		1				1	1		
La Fayette, Ind	20,081	9										2		
Lebanon, Pa	19,240	3												
Logansport, Ind	19,050	7									2		1	
Marinette, Wis	14,610	4			9	1						1		1
Marlboro, Mass	14,579	7					1							
Massillon, Ohio							1		2				1	
Medford, Mass	23,150	6												
Melrose, Mass	15,715	4			1		1							
Moline, Ill	24,199	10											1	
Montclair, N. J	21,150	7			2							2	2	
Morristown, N. J	12,507	5									1		1	
Nanticoke, Pa	18,857	5	1		48							1		
Newburyport, Mass	19,240	4	1											
North Adams, Mass	22,012	6										1		
Northampton, Mass	19,431	8			1							1		
Ottumwa, Iowa	22,012	8											1	
Peekskill, N. Y		9										1		
Plainfield, N. J	22,550	8			1		1				2	1		
Pottstown, Pa		1												
Saratoga Springs, N. Y		9			1							2		
South Bethlehem, Pa	19,973	8	2	2	5						1			1
Steelton, Pa	14,246	3	15	1					6		2			
Warren, Ohio	11,080	2	1											
Wilkinsburg, Pa	18,924	5												
Woburn, Mass	15,308	4			1		1				1	2		

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

FLORIDA.—Reports from the State board of health show as follows: Week ended January 13, 1912. Diphtheria present in 3 localities with 3 cases, malaria in 2 localities with 7 cases, smallpox in 3 counties with 27 cases, tuberculosis in 4 localities with 10 cases, typhoid fever in 9 localities with 10 cases.

Week ended January 20, 1912. Diphtheria present in 1 locality with 1 case, malaria in 2 localities with 12 cases, smallpox in 4 counties with 41 cases, tuberculosis in 6 localities with 7 cases, typhoid fever in 5 localities with 10 cases.

INDIANA.—Month of November, 1911. Population, 2,700,876. Total number of deaths from all causes 2,614, including diphtheria 47, scarlet fever 12, tuberculosis 283, typhoid fever 74. Cases reported: Diphtheria, 735 in 57 counties, scarlet fever 334 in 56 counties, typhoid fever 251 in 56 counties.

MICHIGAN.—Month of December, 1911. Population, 2,810,173. Cases of communicable diseases reported: Diphtheria 362, measles 28, scarlet fever 367, smallpox 71, typhoid fever 110, tuberculosis 212.

FOREIGN AND INSULAR.

ARABIA.

Hodeida—Cholera in Vicinity.

Consular Agent Lindemeyer reports, December 27, 1911, that an outbreak of cholera with 2 deaths had occurred at Ras-el-Ketib, a locality in the vicinity of Hodeida. A cordon had been established at Hodeida.

CUBA.

Transmissible Diseases.

The following statement of transmissible diseases in the Island of Cuba was issued by the Cuban sanitary department:

Month of December, 1911.

Diseases.	New cases.	Deaths.	Remaining under treatment.
Tuberculosis	122	198	1,788
Leprosy	6	4	350
Malaria	196	12	164
Typhoid fever	53	13	61
Diphtheria	88	17	30
Measles	59	3	36
Scarlet fever	6		4
Varicella	11		2
Epidemic dysentery	1		
Tetanus in newborn	19	17	3

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911.

The last plague-infected rat was found at Honokaa December 18, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

Week ended Jan. 6, 1912.

Total rats and mongoose taken	377
Rats trapped	375
Mongoose trapped	2
Rats examined bacteriologically	349

Classification of rats trapped:

Mus alexandrianus	59
Mus musculus	89
Mus norvegicus	23
Mus rattus	204
Average number of traps set daily	1,720

Mosquito-Eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy:

Mosquito-eradication measures conducted at Honolulu from Dec. 26 to 30, 1911, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled up.	Ordered repaired.	Screened.	Stocked with fish that destroy mosquito larvæ.
Gutters:											
House	1,892	72	1,111	1,322					6		
Street	137			85	24						
Standing water	529	17		500	19			1			
Cesspools	884	15		840					4	213	
Privy vaults	850	1		764					4		
Holes and low places	1,201	80		605	6			242	2		
Catch basins	210	5		63		76					
Leaky fixtures	192			19					85		
Swamps	24	7		19							
Ponds	19			5	3						2
Troughs and tanks	268	4		7		171					1
Tubs and other receptacles	576	22				538					
Tin cans, bottles, etc	14,686	65					14,686				
Water barrels	275	20				121					
Vacant houses		9		1							
Holes in trees	141	43		31		31		110			

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended December 2, 1911, 51 deaths from cholera and 5 from plague were reported at Calcutta; in all Bengal, 413 cases of plague with 305 deaths; in all India, 8,802 cases of plague with 6,931 deaths. During the week ended December 9, 1911, 33 deaths from cholera and 2 from plague were reported at Calcutta; in all Bengal, 313 cases of plague with 231 deaths; in all India, 8,540 cases with 6,583 deaths.

INDO-CHINA.

Increase in Cholera.

Reports from Consul Baugh show an increase in the prevalence of cholera at Saigon during the month of December, 1911. From May 15 to November 5, 94 cases with 66 deaths were reported; from November 20 to December 3, 30 cases with 25 deaths, and from December 4 to 17, 173 cases with 144 deaths.

ITALY.

Status of Cholera.

During the week ended December 24, 1911, cholera was reported in Italy as follows: In the Province of Caltanisetta, 1 case; Province of Girgenti, 15 cases with 6 deaths in 3 localities; Province of Syracuse, 14 cases with 8 deaths in 2 localities.

MEXICO.

Smallpox.

Smallpox is reported present in epidemic form at Porfirio Diaz, State of Coahuila, Mexico. From December 16, 1911, to January 22, 1912, 26 deaths from the disease were reported. The county commissioners of Maverick County, Tex., have declared rigid quarantine against Porfirio Diaz, and persons from that town are prohibited from crossing the bridges that connect the town with Eagle Pass, Tex.

At Magdalena, State of Sonora, 78 cases of smallpox with 1 death were reported January 17. The Mexican Government is maintaining strict quarantine against Magdalena.

On January 21 smallpox was reported present at San Antonio, a locality situated opposite the town of Terlingua, Brewster County, Tex., with a total to date of 12 cases with 9 deaths.

Yellow Fever in Merida and Vicinity.

During the week ended January 6 yellow fever was reported in the Mexican Republic as follows: At Temax 1 case, at Espita 1, and at Maxcanu 1, these localities being situated at a distance of 84, 174, and 58 kilometers, respectively, from Merida, and at the city of Merida during the same period 1 death which occurred January 4.

RUSSIA.

Odessa—Typhus Fever.

Consul Grout reports: During the week ended December 23, 1911, an outbreak of typhus fever occurred at Odessa, with a total of about 100 known cases. The outbreak occurred at several night rests and at police stations. The disease appears to be highly contagious in form though not malignant. Measures have been taken to prevent spread.

ZANZIBAR.

Zanzibar—Examination of Rats.

Consul Weddell reports: During the two weeks ended December 14, 1911, 1,539 rats were examined for plague infection. No plague-infected rat was found.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED FEB. 2, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Ras-el-Ketib	Dec. 27		2	In the military hospital.
India:				
Rangoon	Nov. 1-30	4	4	
Indo-China:				
Saigon	Dec. 4-17	178	144	
Java:				
Batavia	Dec. 12-18	4	2	
Turkey in Asia:				
Jiddah	Dec. 11-24	246	264	Total Dec. 2-24: Cases, 323: deaths, 310.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	Dec. 24-Jan. 6		3	
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Maxcanu	do	1		
Merida	do	3		
Temax	do	1		

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Para	Jan. 1-6	3	2	
Pernambuco	Oct. 16-Jan. 16		4	
Rio de Janeiro	Dec. 10-23	3	2	
India:				
Bombay	do	19	16	
Karachi	Dec. 17-23	1	1	
Rangoon	Nov. 1-30	12	12	
Indo-China:				
Saigon	Dec. 4-17	2	2	
Java:				
Pasoeroean Residency	Dec. 12-18	10	3	
Peru:				
Salaverry	Dec. 25-Jan. 9			Present in vicinity.
Straits Settlements:				
Singapore	Dec. 3-9	5	4	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Argentina:				
Rosario	Nov. 1-30		6	
Austria-Hungary:				
Galicia	Dec. 24-30	1		
Brazil:				
Para	Dec. 31-Jan. 6	1	1	
Pernambuco	Dec. 1-15		74	
Rio de Janeiro	Dec. 10-23	4		
Canada:				
Montreal	Jan. 14-20	1		
Ottawa	Jan. 1-13	9		
China:				
Canton	Dec. 1-16	10	1	
Shanghai	Dec. 11-17		1	
France:				
Paris	Jan. 1-6	10		
Germany	Dec. 31-Jan. 6	1		
India:				
Bombay	Dec. 10-23	15	9	
Rangoon	Nov. 1-30	11	3	
Indo-China:				
Saigon	Dec. 4-10	3		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended Feb. 2, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Italy:				
Leghorn	Jan. 1-6	15		
Java:				
Batavia	Dec. 12-18	2		
Malta	Jan. 1-6		1	
Mexico:				
Chihuahua	Dec. 19-Jan. 14	32	13	
Juarez	Jan. 7-20	4	2	
Magdalena	Jan. 9-20			80 cases in quarantine, 11 in city.
Porfirio Diaz	Jan. 7-22	5	6	
Tampico	Dec. 21-31		1	
Portugal:				
Lisbon	Jan. 1-6	4		
Russia:				
Moscow	Dec. 10-23	5	2	
St. Petersburg	Dec. 17-30	54	2	
Spain:				
Madrid	Dec. 1-31		1	
Seville	Dec. 1-31		5	
Valencia	Jan. 1-6	8	2	
Straits Settlements:				
Singapore	Dec. 3-9	2	1	
Teneriffe:				
Santa Cruz	Dec. 15-30		7	
Turkey in Asia:				
Beirut	Dec. 24-30	10	3	
Turkey in Europe:				
Constantinople	Jan. 1-7		5	

REPORTS RECEIVED FROM DEC. 30, 1911, TO JAN. 26, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23; Cases, 37.
Backs-Bodog	Dec. 10-16	9		
Jasz-Nagykun-Szolnok	Dec. 3-23	11		
Torontal	Nov. 19-Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24-Oct. 9: Cases, 322; deaths, 256.
Batavia	Nov. 12-Dec. 2	14	5	
India:				
Calcutta	Nov. 5-Dec. 9		204	
Madras	Nov. 26-Dec. 16	296	231	Madras Presidency, Dec. 1-31: Cases, 3,879; deaths, 2,412.
Rangoon	Oct. 1-31	2	1	
Indo-China:				
Saigon	Nov. 20-Dec. 3	30	25	
Italy				Total June 8-Dec. 24: Cases, 15,979; deaths, 6,021.
Provinces—				
Caltanisetta	Nov. 26-Dec. 23	8	7	
Girgenti	do	100	56	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 26, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Roumania:				
Districts—				
Braila	Nov. 24-Dec. 13	1		Nov. 6-23: 1 death.
Doliju	Nov. 6-Dec. 13	4	4	
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	1	1	
Siam:				
Bangkok	Nov. 5-Dec. 2		149	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	
Tripoli:				
Tripoli	Oct. 25-Nov. 10			150 to 200 among the civil population and 25 to 30 among the military, Dec. 21, 1911.
Tunis Regency				Total Nov. 26-Dec. 21: Cases, 325; deaths, 371.
Beja district	Nov. 25-Dec. 7	30	35	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia:				
Adana	Dec. 2-6	16	5	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 9	29	22	
Jiddah	Dec. 2-10	77	46	
Mekka	Dec. 4-24	906	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	
Turkey in Europe:				
Constantinople	Oct. 24-30	5	1	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Manaos	Nov. 19-Dec. 23		5	
Para	Dec. 9-16	1	1	
Ecuador:				
Bucay	Nov. 16-30	2		
Duran	Dec. 1-15	3	2	
Guayaquil	Nov. 16-Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Merida	Nov. 12-Dec. 30	5	6	Total Aug. 1-Jan. 6: Cases, 53; deaths, 26.
Venezuela:				
Caracas	Nov. 16-Dec. 7	11		
Sabana Grande	Dec. 12			Epidemic.
At Sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096. Vol. XXVI.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-30	5	1	
Rio de Janeiro	Nov. 12-Dec. 2	3	1	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12-Dec. 23	9	4	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 26, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy	Jan. 15			Present.
Hongkong	Dec. 9-16	1	1	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 9: Cases, 1,777; deaths, 1,262.
Pasoeroean Residency, Malang District.	Nov. 12-Dec. 9	31	16	
Soerabaya	Oct. 17-27	2		
Ecuador:				
Guayaquil	Nov. 16-Dec. 15	102	42	
Egypt:				
Provinces—				
Assiout	Oct. 14-Dec. 27	38	36	
Behera	Oct. 15-Dec. 26	3	1	
Galioubeh	Oct. 5-Dec. 26	1		
Kena	Nov. 20-Dec. 13	3	3	
Minieh	Dec. 13	1		
India:				
Bombay	Nov. 19-Dec. 9	25	23	
Calcutta	Nov. 11-Dec. 9		30	
Karachi	Nov. 26-Dec. 16	8	7	
Rangoon	Oct. 1-31	26	27	
Bombay Presidency and Sind.	Oct. 29-Dec. 9	27,376	19,684	
Madras Presidency	do	3,589	2,886	
Bengal	do	1,537	1,136	
United Provinces	do	6,139	4,975	
Punjab	do	820	579	
Burma	do	90	84	
Central Provinces	do	3,803	2,838	
Coorg	do	45	22	
Mysore State	do	3,600	2,787	
Hyderabad State	do	6,012	5,651	
Central India	do	3,403	2,825	
Rajputana and Ajmere Merwara.	do	302	246	
North West Province	do	1	1	Total for India, Oct. 29-Dec. 9; Cases, 56,717; deaths, 43,714.
Indo-China:				
Saigon	Nov. 13-Dec. 3	10	3	
Mauritius	Nov. 3-23	13	8	
Natal:				
Durban	Jan. 17		1	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Nov. 28-Dec. 20	87	84	
Siam:				
Bangkok	Nov. 4-Dec. 2	5	5	
Straits Settlements:				
Singapore	Nov. 5-Dec. 2	5	5	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Arabia:				
Aden	Nov. 28-Dec. 18	1	1	
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	do		25	
Austria-Hungary:				
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Nov. 30		246	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Dec. 2	1	1	
Canada:				
British Columbia—				
Nelson	Dec. 24-30	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 26, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-23	12		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-13		1	
Quebec—				
Montreal	Dec. 17-23	2		
Quebec	Dec. 10-Jan. 13	137	1	
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Iquique	Dec. 10-16	2		
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		
China:				
Canton	Nov. 11-25	15	3	
Chungking	Nov. 18-25			Present.
Hongkong	Nov. 12-Dec. 16	43	32	
Nanking	Dec. 10-16			Do.
Cuba:				
Habana	Dec. 19	1		From German s. s. Frankenwald from Spain and Canary Islands.
Egypt:				
Cairo	Dec. 10-16	1		
France:				
Marseille	Nov. 1-30		1	
Paris	Dec. 3-16	26	2	
India:				
Bombay	Nov. 19-Dec. 9	25	13	
Calcutta	do		16	
Madras	Nov. 26-Dec. 9	18	10	
Rangoon	Oct. 1-31	18	6	
Indo-China:				
Saigon	Nov. 13-Dec. 3	15		
Italy:				
Genoa	Dec. 1-15	6	1	
Leghorn	Dec. 16-30	31	1	
Naples	Dec. 3-30	31	1	
Palermo	Nov. 26-Dec. 30	1,263	412	
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Java:				
Batavia	Nov. 12-Dec. 9	10	3	
Malta	Dec. 24-30	2		
Mexico:				
Aguascalientes	Dec. 18-Jan. 7		2	
Chihuahua	Nov. 20-Dec. 26	30	6	
Coahuila, State	Oct. 1-30		16	
Juarez	Dec. 19-23	1		
Magdalena	Dec. 23-Jan. 20		30	Dec. 23-Jan. 8, 99 cases.
Mazatlan	Dec. 11-Jan. 2		4	
Mexico	Nov. 26-Dec. 16	16	10	
Monterey	Dec. 11-24		2	
Porfirio	Dec. 3-Jan. 6	20	20	
Sandoval	Dec. 16			Present.
San Ignacio	Jan. 8	3		
Santa Ana	do	4		
San Luis Potosi	Nov. 12-Dec. 2	3		
Tampico	Dec. 1-20	4	4	
Tapachula	Nov. 1-22		13	
Portugal:				
Lisbon	Dec. 9-30	15		
Russia:				
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Dec. 9	7	2	
Odessa	Nov. 26-Dec. 23	7	1	
Reval	Nov. 1-30	1		
St. Petersburg	Nov. 19-Dec. 16	30	7	
Warsaw	Nov. 5-Dec. 2		185	
Spain:				
Cadiz	Nov. 1-30		5	
Malaga	do		45	
Valencia	Dec. 3-30	37	4	
Straits Settlements:				
Singapore	Nov. 19-Dec. 2	5		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 26, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Switzerland:				
Zurich, Canton	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	do		20	
Turkey in Asia:				
Beirut	do	30	10	
Turkey in Europe:				
Constantinople	Dec. 4-31		21	
Uruguay:				
Montevideo	Sept. 1-Oct. 31	19	3	
Venezuela:				
Caracas	Nov. 1-Dec. 31	11		
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Jan. 6	163,084	68								1			
Aguascalientes	Jan. 14	40,000	46	2					2					
Amsterdam	Jan. 13	580,365	122	19							1		1	7
Antwerp	Dec. 30	327,668	69	7							7		1	
Assuncion	Dec. 16	75,000	30	2						1				
Athens	Dec. 31	25,010	74	17										
Basel	do	136,000	37	3								1		1
Do	Jan. 6		23	7								1		
Batavia	Dec. 18	217,630				2								
Belgrade	Dec. 30	90,050	32								1			
Beirut	do	80,000	20	2				3	4					
Belfast	Jan. 6	385,492	129	19								3		2
Berlin	Dec. 30	2,083,197	565	67						1	9	19	4	5
Birmingham	Jan. 13	482,512	254								1	2		12
Bombay	Dec. 16	977,822	637	42	5			4					1	
Do	Dec. 23		726	48	11			5					1	
Bradford	do	288,723	75	2						1	2	1		1
Do	Dec. 30		85	3							1	2		
Do	Jan. 6	289,618	97	9						1		1	1	
Bristol	Jan. 13	359,400	104	10								1		1
Brussels	Jan. 6	739,684	187	20								3	1	1
Canton	Dec.1-16	1,000,000	230	30				1		5		4		
Catania	Jan. 12	207,000	99	6					2		4		2	
Chihuahua	Dec. 24	39,000	20	1				2						
Do	Dec. 31		18	1				2						
Do	Jan. 7		21	3				4						
Do	Jan. 14		30	2				5						
Christiania	Dec. 23	245,000	66	11							1	2	2	
Do	Jan. 6		56	12								2		1
Constantinople	Jan. 7	1,000,000	266	29				5		2	6	2	4	
Edinburgh	Jan. 6	321,000	100	8						1		1	2	
Ghent	do	165,965	36	5						1		1		
Glasgow	Jan. 12	785,000	261								3	7	13	3
Hamburg	Jan. 6	953,079	236	23							1	19	3	
Havre	do	136,159	61	8								1	1	
Hongkong	Dec. 16	336,488			1			12		1		1		
Hull	Jan. 6	282,987	82							1		1		
Juarez	Jan. 13	6,500	10					1						
Do	Jan. 20		16	2				1						
Karachi	Dec. 23	148,000	81		1									
Kingston	Jan. 6	59,584								1				

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Kobe	Dec. 24	404,851	140									1		
Do	Dec. 31		159							1		1		
Leeds	Jan. 13	445,568	124	11						1		5	1	2
Leghorn	Jan. 6	104,000	31											
Leith	..do....	81,000	28	3							1		1	
Liverpool	Jan. 16	752,055	244	22								6	8	2
London	Jan. 6	7,340,125	2,020							6	6	12	21	19
Lyon	Dec. 23	523,796	168	20						1		1	1	
Do	Dec. 30		146	27								1		
Do	Jan. 6		168	31							1	1	1	
Manaos	Dec. 30	52,000	39	3					2					
Do	Jan. 6		45	1					1					
Manchester	Jan. 6	631,533	204									1	8	2
Monterey	Jan. 14	100,000	69	3							1			
Montreal	Jan. 20	466,197	184	24							3	1	1	
Moscow	Dec. 16	1,500,000	717	91				1	2	2	14	10	47	4
Do	Dec. 23		807	85				1	1	5	25	16	27	12
Nagoya	Dec. 16	418,627	130							2		1		
Do	Dec. 23	419,434	117							1				
Nantes	Jan. 7	161,908	54	13						1				
Newcastle-on-Tyne	Jan. 6	267,261	85	5							1	2		1
Ottawa	Jan. 13	90,000	26									1		
Para	Jan. 6	185,000	47	5	2			1						
Paris	..do....	2,847,000	914	189						7	16	4	14	1
Patras	Jan. 7	40,000	12	2						1				
Penang	Dec. 16	101,427	39	13						2				
Porfirio Diaz	Jan. 13	16,000	9					5						
Do	Jan. 22							1						
Port Elizabeth	Dec. 16	30,692	13	1						1				
Quebec	Jan. 20	78,200		3										
Rio de Janeiro	Dec. 16	912,169	360	82	1							2	3	6
Do	Dec. 23		399	79	1								4	6
San Luis Potosi	Dec. 9	82,964	64	2					1					
Santa Cruz de Teneriffe	Dec. 30	46,000	24	1				7		1				
Shanghai	Dec. 24	492,000	140	13							1	1		
Saigon	Dec. 10	220,000	57		1	56								
Do	Dec. 17		89		1	88								
St. Petersburg	Dec. 23	1,907,708	738	133				2	1	29	16	12	19	4
Do	Dec. 30		693	130						12	15	11	24	8
Singapore	Dec. 9	303,328	256	26	4			1		1		1		
Stockholm	Dec. 23	343,832	76	9										1
Do	Dec. 30		70	7							1	1	1	3
Stoke on Trent	Jan. 6	327,153	91	10						1	1	2	1	
Sydney	Jan. 20	16,000	6									1		
Tampico	Dec. 31	23,452	50	4				1		1				2
Do	Jan. 10		38	5									1	
Tarragona	Jan. 6	23,150	8	1									1	
Toronto	Jan. 20	392,000	146	12						2	3	6	1	1
Turin	Jan. 7	401,555	139	21								3	1	
Valencia	Jan. 6	240,000	111	11				2		1	1	1		
Vigo	Dec. 23	41,500	16	3								1		
Do	Dec. 30		8	1										
Do	Jan. 6		10	3										
Vladivostok	Nov. 28	84,578	10								1			1
Do	Dec. 5		9	1						3	5	1		
Do	Dec. 13		8	1							5			
Winnipeg	Jan. 13	151,958	28								1	1		
Windsor, Ontario	Jan. 20	17,810	15	2						1				

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

Brazil—*Pernambuco.*—Month of December, 1911. Population 225,000. Total number of deaths from all causes 690, including diphtheria 1, measles 1, plague 1, smallpox 141, tuberculosis 113, typhoid fever 8.

France—*Roubaix.*—Month of December, 1911. Population, 122,154. Total number of deaths from all causes 156, including diphtheria 1, scarlet fever 1, tuberculosis 22, typhoid fever 1.

St. Etienne.—Two weeks ended December 31, 1911. Population, 150,000. Total number of deaths from all causes 118, including diphtheria 1, scarlet fever 1, tuberculosis 21, typhoid fever 1.

Great Britain.—Week ended December 30, 1911.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 15.8 per 1,000 of the population, which is estimated at 16,157,797.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 18 per 1,000 of the population, which is estimated at 1,149,495. The lowest rate was recorded at Waterford, viz, 7.6, and the highest at Newtownards, viz, 22.9, per 1,000.

Scotland.—The deaths registered in 8 principal towns correspond to an annual rate of 17.3 per 1,000 of the population, which is estimated at 1,710,291. The lowest rate was recorded at Leith, viz, 9.1, and the highest at Aberdeen, viz, 24.9, per 1,000. The total number of deaths from all causes was 568, including diphtheria 17, measles 26, scarlet fever 4, typhoid fever 2.

Italy—*Florence.*—Month of November, 1911. Population, 232,860. Total number of deaths from all causes 307, including measles 1, tuberculosis 42, typhoid fever 12.

Genoa.—Two weeks ended December 31, 1911. Population, 272,077. Total number of deaths from all causes 273, including tuberculosis 26, typhoid fever 3.

Jamaica—*Kingston.*—Month of December, 1911. Population, 52,000. Total number of deaths from all causes 154, including tuberculosis 10, typhoid fever 4.

Russia—*Libau.*—Four weeks ended December 13, 1911. Population, 90,000. Total number of deaths from all causes not reported. The deaths include diphtheria 5, scarlet fever 8, typhoid fever 2.

Siam—*Bangkok.*—Four weeks ended December 2, 1911. Population, 600,000. Total number of deaths from all causes not reported. The deaths include cholera 149, plague 2, smallpox 185.

Spain—*Almeria.*—Month of December, 1911. Population, 50,910. Total number of deaths from all causes 110, including diphtheria 1, tuberculosis 11, typhoid fever 2.

Madrid.—Month of December, 1911. Population, 584,117. Total number of deaths from all causes 1,225, including diphtheria 22, measles 10, scarlet fever 1, smallpox 1, tuberculosis 153.

Malaga.—Month of November, 1911. Population, 133,000. Total number of deaths from all causes 345, including diphtheria 4, measles 4, smallpox 45, tuberculosis 21.

Seville.—Month of December, 1911. Population, 158,235. Total number of deaths from all causes 411, including diphtheria 8, smallpox 5, tuberculosis 57.

TAHITI.—Two weeks ended December 22, 1911. Population, 4,000. Total number of deaths from all causes 3. No contagious disease.

VENEZUELA—*La Guaira.*—Two weeks ended December 31, 1911. Population, 10,000. Total number of deaths from all causes 20, including tuberculosis 3.

By authority of the Secretary of the Treasury.

RUPERT BLUE,
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United States Public Health and Marine-Hospital Service.

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VEGETABLES AS A POSSIBLE FACTOR IN THE DISSEMINATION OF TYPHOID FEVER.

By R. H. Creel, Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

Obviously a factor of great importance in the consideration of the prevalence and spread of typhoid fever is the viability of the *Bacillus typhosus*. Through what agencies the majority of cases contract infection is a mooted question by no means settled. Without going into such a discussion to any great length, it would seem that the dissemination of infection is due not so much to any article of food or drink as to the incidence of contamination. A study has been made of contaminated vegetables as one of the factors in transmitting typhoid infection, with additional reference to the longevity of the *Bacillus typhosus* in polluted soil.

Regarding the viability of the *Bacillus typhosus*, outside the human body, a large amount of experimental work has been done. The diversity of results has been in direct proportion to the number of investigators. Most of the work has been confined to soil, feces, and water.

Wurtz and Bourges in 1901 demonstrated that plants could be contaminated by infected soil. They recovered the *Bacillus typhosus* from vegetables grown under such conditions up to three weeks after the soil had been infected.

It is probable that much of the work done by early investigators in the study of the viability of the *Bacillus typhosus* was without value, because of the confusion of Eberth's bacillus with other organisms, which had in common with the *Bacillus typhosus* certain cultural or biological peculiarities. Admitting, however, that much of the earlier work is not to be unreservedly accepted, studies have been done in comparatively recent years by investigators, whose methods and results are unquestioned. Notably among these are Firth and Horrocks who worked upon the longevity of the *Bacillus typhosus* in soil. Their identification of the organism was complete. On ordinary soil, inoculated with an emulsion of the *Bacillus typhosus* in plain water, the ground being given no subsequent treatment except rain water in proportion to the natural precipitation, the organism was recovered throughout 67 days. In the same soil, nurtured with diluted sterile sewage, the longevity was 74 days. In the soil around an old drain, the organism was recovered 65 days after inoculation. On soil kept perfectly dry and exposed to direct sunlight, the longevity was twenty days, with a total exposure to sunlight of 120 hours.

More recently Galvagne and Calderini, using most thorough methods of identification, determined the longevity of the *Bacillus typhosus* in a privy vault, in a barrel, and in soil. The longevity in the privy vault was 30 days, in the barrel 25 days. In feces spread upon soil, after 10 days in the vault, the duration of viability was 20 days on the surface and 40 days in the deeper layer, a total of 30 and 50 days, respectively.

Levy and Kayser report a case where the longevity of the *Bacillus typhosus* from feces in a naturally infected vault extended to over 5 months. This included a period of 14 days, during which time the infected feces had lain as manure in a garden.

Mair regained the organism after 84 days from soil inclosed by glass and with moisture added. From an aquarium containing fish, protozoal, and plant life with a bacterial count of 60,000 per cubic centimeter and exposed to sunlight during part of the day, Hoffman regained the *Bacillus typhosus* from water 36 days, and from mud at the bottom of the tank, 2 months after infection.

Such results as these seem ample refutation of the contention of those who claim that the *Bacillus typhosus* is an obligative parasite.

From lack of more definite methods our knowledge of typhoid infection in human beings is limited chiefly to various epidemiologic surveys. In arriving at conclusions as to the infecting agencies, the epidemiologist bases his findings on presumptive evidence, and, while his deductions may be clearly logical and convincing, still such a process of forming conclusions not infrequently admits of doubt as to the actual cause of infection. In reviewing the epidemiological data of different typhoid epidemics, the fact that the majority of typhoid cases, forming so-called "explosive" outbreaks, acquire infection through the ultimate sources of milk and water, becomes apparent. In the prosodemic cases, the part played by carrier infection, through contact with food, or other similar channels, has been more thoroughly appreciated in the last decade. Little attention has apparently been paid to the rôle of foodstuffs which are eaten uncooked, such as fruits and vegetables, in conveying infection acquired at the time of cultivation. In order to determine the possibility of this means of infection and to test the viability of the typhoid bacillus on garden truck, the following experiments were conducted in raising radishes and lettuce, fertilized with infected material.

METHOD OF INOCULATION.

Preliminary work was done in December, 1910, and January, 1911, under hothouse conditions. Glass jars were used, filled with loamy soil. Rainfall was simulated by using an ordinary garden watering pot, the plants being sprinkled every two or three days. As work had to be done in a basement, for lack of other available space, the plants had very little sunshine and did not grow to maturity. Poor horticultural methods probably had much to do with the failure to mature plants. The temperature was ordinary room temperature. In April lettuce and radishes were planted in the open, exposed to natural conditions. On the second day, after planting the seed, the surface of the ground was sprinkled with a fecal emulsion, mixed with 24-hours' old agar culture of the *Bacillus typhosus*. No nutrient medium whatever was introduced into the infecting mixture. The culture was removed from the agar slant with sterile water and then mixed with the fecal material. Thus the ground was infected subsequent to seeding and prior to the appearance of the plants.

METHOD OF ISOLATION OF THE BACILLUS TYPHOSUS.

Two different media were used for the isolation of the organism, Endo's medium, and a mannite litmus agar. Endo's medium, as ordinarily made, contains 4 per cent agar, alkalinized with 10 cubic centimeters of a 10 per cent solution of sodium carbonate ($NA_2\ CO_3$) to each liter of the neutral agar. If a 10 per cent solution of anhydrous sodium carbonate ($NA_2\ CO_3$) is used in the above quantity, the alkalinity is so great as to be too restraining to the *Bacillus typhosus*. This amount was, therefore, decreased to 6 cubic centimeters to each liter of neutral agar.

The alkaline agar is flasked in amounts of 200 to 400 cubic centimeters. When needed for use it is melted in an Arnold sterilizer, and to it is added 1 per cent lactose, 0.5 per cent saturated alcoholic fuchsin, and 0.25 per cent anhydrous sodium sulphite, according to formula. Plates are poured immediately.

Firth and Horrocks laid great stress on the efficacy of the glucose litmus agar plate method in isolating the *Bacillus typhosus*, there being a difference in the color play in the colonies of these organisms, due to the different sugar-splitting properties of the *Bacillus typhosus*, the *Bacillus coli*, and the soil organisms. I did not have the same success as these authors with this medium, but found a mannite litmus agar highly satisfactory.

Both Endo's medium and mannite medium have points of merit as well as disadvantages. Endo's medium has the advantage of inhibiting a number of organisms other than the *Bacillus typhosus*, leaving the colonies of the *Bacillus typhosus* fairly discrete and isolated. The mannite medium in nowise restrains, and it permits of an overgrowth and confluence of colonies. On the other hand several organisms which present the same characteristics on Endo's medium as colonies of the *Bacillus typhosus* show marked differentiation on mannite medium.

In this work two soil organisms corresponding in a general way culturally with the *Bacillus aurescens*, the *Pseudomonas ovalis*, and the *Bacillus lactis aerogenes* caused a confusion with typhoid colonies when plated on Endo's medium. On mannite litmus agar these colonies were readily differentiated, those of the *Bacillus coli* and *Bacillus lactis aerogenes* being opaque, large, and of a dirty pink color; those of *Bacillus aurescens* reddish opaque; those of *Pseudomonas ovalis* opaque and white, while the colony of *Bacillus typhosus* was a clear amber. The difference is readily accounted for by the different mannite-splitting property of these organisms. Planted in mannite broth fermentation tube for 24 hours the net increase of acidity over the control tube was for the *Bacillus typhosus* equal to an amount of decinormal sodium hydrate solution equivalent to 20 per cent of the volume of the culture, for the *Bacillus aurescens* 10 per cent, *Bacillus coli* 17 per cent. The *Pseudomonas ovalis* was slightly alkaline.

METHOD OF EXAMINATION OF PLANTS.

The parts of the plants selected for examination were the leaves and stems, cut off well above ground, so that the roots with the adherent soil could not enter into the results. The procedure varied between rubbing the leaf and stem directly on surface of plated medium, and washing these parts with a small quantity of broth, the latter being plated without any incubation. Using the "washings" immediately, or after standing for an hour or two, gave better results with fewer saprophytes on the resultant plate than plating out from an incubated specimen.

IDENTIFICATION OF THE BACILLUS TYPHOSUS.

Characteristic colonies on the plates were planted in broth tubes and incubated for 24 hours, at which time a drop of highly agglutinative serum was added. If agglutination occurred, the culture was replated and the resulting growth studied on different media. Confirmation was considered complete if the organism was a motile bacillus, agglutinating in high dilutions, not liquefying gelatine, producing an acidity of milk not exceeding that caused by a known typhoid control, giving negative Indol test, and forming no gas on lactose broth.

ERRORS IN AGGLUTINATION.

In only one instance was there agglutination of an organism that later proved to be other than the *Bacillus typhosus*. A strain of *Bacillus acidi lactici* produced agglutination, but not of the same appearance as that caused by the typhoid strain worked with. Whereas the *Bacillus typhosus* early gave a flocculent precipitate, the upper part of the broth tube becoming clear, this *Bacillus acidi lactici* caused a finely granular appearance in the broth and did not tend to precipitate or become flocculent. Subsequent growth on other media proved its identity.

EXPERIMENT I.

Plants cultivated within house.

Date planted.	Date inoculated.	Parts examined.	Date of last positive examination.	Total longevity.
Jan. 6	Jan. 8	Leaves and upper stems	Feb. 2	25 days.

In this experiment the plants commenced wilting on February 3, and no subsequent examination was made. In all there were during the growth of the plants 10 clear days. The total exposure of the growing plants to sunlight was approximately 30 hours. Examinations were made on alternate days from the time the plants first appeared above the ground. The plants were watered every two days with a garden sprinkling pot.

EXPERIMENT II.

Plants cultivated in open air exposed to rain and sunlight during part of day.

Date planted.	Date inoculated.	Parts examined.	Date of last positive examination.	Total longevity.
Apr. 12	Apr. 15	Leaves and stems	May 16	31 days.

During the period from April 15 to May 16 there were 23 days, with approximately 138 hours of exposure to direct sunlight. On 8 days there was rain, on 4 of which moderate showers fell, and 4 very light precipitation. These vegetables were planted in a location where the sun shone upon them only in the forenoon. Examinations were made every 3 days. Examinations were positive for the *Bacillus typhosus* up to the tenth day. From the tenth day to the thirtieth the organism was not recovered, but on the thirtieth and thirty-first, positive results were obtained. The *Bacillus typhosus* was not recovered after the thirty-first day.

In this examination from 6 to 10 endo plates were made at each examination and from 30 to 40 suspected colonies picked, the large majority of which were negative.

Plants were not sprinkled during this period, although there was practically a drought as only 1.03 inches of rain fell throughout the 31 days. As desiccation is one of the most devitalizing conditions affecting the *Bacillus typhosus*, this test was more severe than would have obtained in most truck gardens where good horticultural methods are in use, as in the latter the moisture due to irrigation or sprinkling would constitute a more favorable environment for the *Bacillus typhosus* and conduce to greater longevity.

The only explanation for negative examinations from the tenth day to the thirtieth day, aside from defective technique, or lack of thoroughness in examination, is that the leaves examined on the thirtieth and thirty-first days were smaller and protected from the sun's rays by a larger plant.

The plant examinations were negative subsequent to May 16.

The *Bacillus typhosus* was recovered from the soil 35 days after inoculation.

EXPERIMENT III.

Plants cultivated in open air exposed to sunlight throughout entire day and to rainfall.

Date planted.	Date inoculated.	Parts examined.	Date of last positive examination.	Total longevity.
Apr. 12	Apr. 15	Leaves and stems	Apr. 25	10 days.

Conditions in this experiment were the same as in the succeeding except as to length of exposure to sunshine. This space was unshaded hout the entire day. From April 15 to 25 the total exposure hine amounted to 84 hours.

EXPERIMENT IV.

In order to determine with what tenacity the organisms were adherent to the plant and to what degree natural precipitation might be depended upon to free growing vegetables of infected material, a leaf of lettuce, from an infected bed, was subjected to washing. The leaf was placed in a conical glass containing sterile water and thoroughly cleansed by means of a pipette and platinum needle. This was repeated by passing the leaf through two other washings. After the third washing the leaf, in an almost macerated condition, was rubbed on an Endo plate and all three washings were plated out. Plates inoculated from the first washing and from the leaf gave positive findings.

CONCLUSIONS.

In the foregoing experiments it is evident that plants cultivated in contaminated soil will take up on the leaves and stems, as they grow through the soils, organisms existing therein.

The *Bacillus typhosus* was recovered from the tips of leaves that were, to naked-eye appearances, free from soil, although it is presumable that microscopic particles of earth were adherent to the leaves.

Rainfall will not free vegetables from infected material.

Conditions in Experiments II and III correspond to the natural, except as to the infecting material, which was an artificially infected stool, as no typhoid stool was available.

Under conditions most unfavorable to the *Bacillus typhosus*, the infection lasted at least 31 days, a period sufficiently long for some varieties of lettuce and radishes to mature.

SANITARY CONSIDERATION.

Accepting the results of a large number of investigators, it is evident that the *Bacillus typhosus* may be classed among the soil bacteria rather than among the water organisms. The longevity of the *Bacillus typhosus* according to different workers, ranges in unsterilized water from 7 to 30 days, whereas the duration of life is prolonged in soil to 60 and 70 days.

With this end in mind, the fertilization of ground by human excreta assumes a twofold importance. When pollution of garden earth with infected material occurs, not only may the vegetables thereon, such as lettuce, radishes, and celery, directly convey infection, but the soil may serve as a reservoir for the bacteria, drainage from such areas serving to maintain in streams an infection for much longer periods than if the infection of the stream were direct.

Of all the problems confronting the sanitation of this country in recent years few have received more attention than that of stream pollution. But in the consideration of the contamination resulting from the discharge of urban sewage, which is admittedly of paramount importance, that arising from a great and widespread rural population has been given less consideration than it deserves.

The practice of using human excreta as fertilizer is by no means as uncommon as is generally supposed, and without doubt will become more widespread unless this method of soil enrichment be curtailed by properly enforced laws. Although some emphasis has been laid on the fact that tips of vegetables examined were microscopically free from earth, the viability of the *Bacillus typhosus* on plants, and its longevity in soil, can be considered identical so far as the sanitary significance is concerned, for very seldom if ever is there seen in the market lettuce or celery free from dirt, and even in well managed households and public eating places scrupulous care in preparing articles for the table is exceptional.

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Viability of *B. typhosus* in soil.

TYPHUS FEVER IN THE UNITED STATES.

In last week's issue of the Public Health Reports there appeared under the title "The relation of so-called Brill's disease to typhus fever," a report of work done by Passed Asst. Surgs. Anderson and Goldberger, which shows that the so-called Brill's disease is identical with the typhus fever of Mexico. The typhus fever of Mexico is very probably the same as the typhus fever of Europe and Asia, and presumably the infection known to exist in New York, and understood to have occurred in other large cities, was imported by European or Asiatic immigrants. This gives the American physician a new disease with the symptoms of which he should familiarize himself, and the possible appearence of which among patients he should keep constantly in mind. To the health authorities of the United States it presents a new infectious disease for consideration and control.

From 1896 to the end of 1910 Dr. Nathan E. Brill noted among the medical patients in one hospital in New York City 255 cases of a disease which in general symptoms resembled typhoid fever to some extent, and which very probably has usually been so diagnosed. Dr. Brill, however, clearly differentiated the two diseases, and in various reports drew attention to the similarity of his cases to typhus fever. That the disease could be typhus fever, however, he could hardly believe, because of its mildness and low fatality. Among the 255 cases which he had observed there was but one death.

In addition to the cases reported by Brill, Dr. Leon Louria reported 18 cases observed during the summer and autum of 1910 in one hospital in Brooklyn.

The fact that cases of typhus fever have been confused with typhoid fever in New York City, and that they are without doubt being so confused in other large cities, is of interest in view of the fact that originally these two diseases were both included under typhus fever and no differentiation was made between them. Gerhard and Pennock, of Philadelphia, are commonly given credit for having in 1837 first definitely established that typhoid fever and typhus were distinctly separate entities.

The clinician has at all times found difficulty in diagnosing mild cases of even the more common diseases. Some of this difficulty is inevitable, but much of it has been due to the fact that the usual descriptions of a disease given in the literature are of its more severe manifestations, which are assumed to be usual and typical and frequently pathognomonic. The natural result of this is that very probably certain diseases are recognized only in their more virulent and at times less common form. . It took some time for the practitioner to readjust his ideas so that he recognized as smallpox the many mild cases occurring in this country, and many of these are still being overlooked. In yellow fever the mild cases, which are probably common during epidemics and in endemic centers, are without doubt not recognized. The same is true of cholera, and our mental pictures of these diseases are very likely those of the more severe forms only. The same may be assumed to be true of many other diseases.

The classical descriptions of typhus fever have not proven sufficient for the identification of the mild type of the disease present in this country, even by so well informed and accurate an observer as Brill. For the convenience, therefore, of those who have not had the opportunity of observing this mild and, compared with the usual descriptions given, atypical form of the disease, the following parallel comparison of the symptoms with those of typhoid fever, with which it is most apt to be confused, is taken from an article by Dr. Brill in the American Journal of the Medical Sciences for April, 1910, Volume CXXXIX, page 500:

TYPHOID FEVER.	BRILL'S DISEASE—TYPHUS FEVER.
Usually long incubation.	Short incubation, four to five days.
Onset not commonly abrupt	Commonly with chill or chilly sensation.
Fever; gradually increasing ascent of temperature to fastigium—in all, about 10 days.	Fastigium reached in three days.
Remissions of temperature occasionally more than a degree.	Rarely more than 1 degree.
Fall usually by gradations to normal, taking commonly one week.	Fall commonly by crisis, not longer than 60 hours.
Eruption, circumscribed, lenticular, papular.	Maculopapular, periphery indistinct and irregular.
Distribution, chiefly, back, and abdomen, seldom appearing on upper and lower extremities; almost unknown on palms and soles.	Distribution in addition to trunk on upper and lower extremities not infrequent, on palms and soles occasionally.
Eruption appears in crops throughout the disease.	Does not appear in crops.
Spots rarely confluent, and then confluence of but two spots.	Confluence may occur with three or four spots forming a number of patches.
Roseola disappearing on pressure.	Erythema, not disappearing on pressure.
Petechial spots (hemorrhagic) very rare.	Petechiæ occasionally.
Apathy and prostration late in development.	Apathy and prostration early.
Labial herpes rare.	Labial herpes in 6 per cent of the group.
Diarrhea fairly common.	Constipation an almost invariable accompaniment.
Hemorrhages from the bowel often observed.	No intestinal hemorrhages or blood in feces.
Headache disappears in second week.	Is more intense and lasts throughout the disease.
Relapses observed by all observers.	Relapses have never occurred.
Widal reaction positive in over 95 per cent of the cases.	Widal reaction invariably absent.
Blood cultures positive in over 90 per cent of the cases.	Blood cultures invariably negative.
Convalescence slow.	Convalescence speedy.

MEASURES FOR PREVENTION.

Both the old world typhus and that of Mexico have been experimentally given to monkeys by the bites of body lice which had previously bitten infected monkeys or human patients suffering with the disease. The body louse is therefore to be considered as a possible, and probably the usual, agent by which the disease is carried from individual to individual. This comparatively recent addition to our knowledge of typhus fever offers an apparent explanation of the diminished frequency of its occurrence in jails and other institutions in which outbreaks were at one time so common in certain countries that the disease was known as jail fever. Typhus fever does not seem to be spread by fomites nor by direct contact unless the contact is such that the exchange of body lice is possible. Wherever cases occur measures should be taken to eliminate the possibility of infected body lice spreading the disease.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BINGHAMTON, N. Y.

BIRTHS AND DEATHS—REPORTS OF.

Births: SEC. 30. Every physician or midwife attending at the birth of a child, and no physician or midwife being in attendance, the parent or custodian of a child born shall cause a notice of such birth to be returned within 36 hours thereafter to the office of the registrar of vital statistics upon the blank notice of birth provided by the department of health, and shall within three days thereafter file with the registrar of vital statistics a complete record of the birth upon the form prescribed by the State department of health, which shall be attested by the physician or midwife if any in attendance, and no physician or midwife being in attendance, by the parent or custodian of the child born.

The physician or midwife attending at the birth of a child shall at the time of filing such certificate, unless it contains the given name of such child, cause to be furnished to the parents or custodian of such child a name card, which shall be filled in by such parent or custodian with the given name of such child when named, and immediately filed with the registrar of vital statistics at his office.

Any person violating any provision of this section shall forfeit and pay a penalty of $2 for each offense.

Deaths: SEC. 31. Upon the death or notification thereof of any person the physician last in attendance upon such deceased shall immediately fill out a certificate of death, giving full name of deceased, medical attendance, date and probable cause of death, duly certify to same and deliver the certificate to the undertaker or person having charge of corpse; and it shall be the duty of the undertaker to obtain the information necessary to complete the certificate from some member of the family of the deceased or competent person who is able to furnish the facts; and after duly recording the same on the certificate shall cause it to be filed with the registrar of vital statistics within 24 hours after having received the certificate. In case an inquest is required by law, the coroner or the coroner's physician shall fill out "said certificate." If no inquest is required and no physician was intendance at the time of death or immediately prior thereto, the health officer shall fill out and file said certificate. Any person violating any of this section shall forfeit and pay a penalty of $5 for each offense. [Amendment to sanitary code, adopted July 28, 1911.]

BLOOMINGTON, ILL.

GARBAGE—COLLECTION, REMOVAL, AND DISPOSAL.

SEC. 1. That hereafter the collection, removal, and disposal of garbage, and all substances, or matter included therewith, within the city of Bloomington, shall be collected, removed, and disposed of by the city as herein provided.

SEC. 2. That the collection, removal, and disposal of garbage as herein provided, shall be under the direction, management, and control of the department of health, and such work shall be maintained and provided for out of funds appropriated for the use of the department of health.

SEC. 3. That the board of health shall employ carts, wagons, or other vehicles, and teams, and other equipment necessary in carrying on such work, and the board of health shall employ such laborers and employees as they may deem necessary to the proper prosecution of said work, including a foreman, at a salary not exceeding $60 per month.

SEC. 4. That there shall be included therewith, and removed as garbage, ashes, in cans, paper, bottles, crockery, rubbish, cellar accumulations, glass, spouting, old tin, small brush, grass and weeds from residence lots when placed in the alleys, building materials, from construction or repair of a building or other improvement to amount of one-fourth of one load from any one place, manure from the fire engine houses, patrol barn and other city premises.

SEC. 5. That the board of health may make such rules and regulations as to them may seem wise or necessary to properly carry on such work, and they may do all things required to fully carry into effect the intent and purpose of this ordinance.

SEC. 6. All ordinances and parts of ordinances in conflict herewith are hereby repealed.

SEC. 7. This ordinance shall be in full force and effect from and after its passage and approval. [Ordinance adopted Aug. 5, 1911.]

BRADDOCK, PA.

HOGS—KEEPING OF, WITHIN BOROUGH.

SEC. 1. Be it ordained and enacted by the town council of the borough of North Braddock, and it is hereby ordained and enacted by authority of the same, that the keeping of hogs within the limits of said borough be and the same is hereby declared to be a public nuisance, and is hereby prohibited.

SEC. 2. Any person or persons, firm or corporation maintaining such nuisance shall upon conviction thereof, forfeit and pay a penalty of not less than $1 nor more than $20 and costs of suit. [Ordinance adopted July 7, 1911.]

BROOKLINE, MASS.

COMMUNICABLE DISEASES—PLACARDING, SCHOOL ATTENDANCE OF CASES AND CONTACTS—NOTIFICATION OF REMOVAL OF CASES OF TUBERCULOSIS—DISINFECTION.

Article 1. Communicable diseases.

SEC. 1. (*a*) No child shall be allowed to attend school from any household in which there is or has been a case of scarlet fever, for a period of six weeks from the commencement of the last case in the household and until a certificate has been presented from the attending physician, the board of health or its agent, that all danger of conveying the disease by such child is passed. (See section D.)

(*b*) No child who has visited a house in which there was at the time a case of scarlet fever shall attend school until the expiration of two weeks following exposure, unless he has already had that disease, except by special permit from the agent of the board of health. (See Section D.)

(*c*) No child who has diphtheria shall be allowed to attend school for a period of one week from the date of the second successive negative bacteriological culture from both nose and throat and until a certificate has been presented from the attending physician that all danger of conveying the disease by such child is passed; and that no well child be allowed to attend school from any household in which there is or has been a case of diphtheria until the same precautions have been taken, with the exception that but one negative bacteriological culture, from both nose and throat, is required. (See Sec. D.)

(*d*) The agent of the board of health may, if circumstances warrant (for example, removal of the patient to hospital), give to children not infected in a household in which there is or has been scarlet fever or diphtheria, a special permit to return to school as soon as he considers it safe for them to do so.

(*e*) No child from any house where there is a case of scarlet fever or diphtheria shall be allowed to mingle with persons from any other house until after the removal, recovery, or death of the patient and the disinfection of the premises.

(*f*) Every house infected with diphtheria, scarlet fever, or smallpox shall have affixed on or near the front and rear doors a card, furnished by the board of health, stating the disease to be avoided; and any unauthorized person removing such a card shall be liable to a fine not exceeding one hundred dollars.

SEC. 2. No child who has chickenpox shall be allowed to attend school until a period of two weeks has elapsed from the first appearance of the eruption and all scabs have disappeared.

SEC. 3. No child who has German measles shall be allowed to attend school until a period of one week has elapsed from the first appearance of the eruption.

SEC. 4. (*a*) No child ill with tuberculosis, who is a menace to the health of others, shall be allowed to continue in school.

(*b*) Whenever a person with tuberculosis moves out of a house or an apartment, the attending physician, if there be one, or the active head of the family, shall so notify the board of health within 24 hours, and both of the above-mentioned persons shall be held legally responsible for violation of this order.

SEC. 5. No child who has mumps shall be allowed to attend school until a period of three weeks has elapsed from the first signs or symptoms of the disease.

SEC. 6. No child who has measles and no child, who has not had the disease, in a household in which there is a case of measles shall be allowed to attend school within two weeks from the appearance of the rash in the last case in such household.

SEC. 7. No child with whooping cough and no child, who has not had the disease, in a household in which there is a case of whooping cough shall be allowed to attend school within eight weeks from the beginning of the cough and until the cough characteristic of the disease has ceased in the last case in such household.

SEC. 8. No child shall be allowed to attend school from any household in which there is or has been a case of cerebrospinal meningitis or of infantile paralysis until a certificate has been presented from the board of health or its agent.

Article II.—Disinfection.

SEC. 1. Such rooms and such articles in any house as in the opinion of the board of health have been subjected to infection or contagion from smallpox, scarlet fever, diphtheria, cerebrospinal meningitis, infantile paralysis, or tuberculosis, shall be disinfected by the board. The attending physician or the agent of the board of health shall decide in each case as to the proper time for disinfecting, and shall then notify the board; but in no case of scarlet fever shall disinfection be done in less than four weeks from the commencement of the last case in the household (except by special permit of the agent of the board); and in diphtheria disinfection shall not be done until after at least two successive negative bacteriological cultures from both nose and throat have been obtained.

SEC. 2. Articles which have been exposed to infection, or those which have been in contact with a patient within 10 days prior to the diagnosis of any of the above-named diseases, shall not be sent to any laundry or other workshop unless they have been first disinfected by the board of health.

SEC. 3. Refuse from the sick room of a person having any of the above-named diseases, shall not be put into any waste receptacle without being first disinfected.

SEC. 4. All books which have been used by a patient having any of the above-named diseases, or otherwise exposed to infection, shall not be returned to any library, school, or circulating agency, without first being disinfected by the board of health. [Ordinance board of health, adopted Nov. 6, 1911.]

CHATTANOOGA, TENN.

UNSAFE AND UNHEALTHY BUILDINGS AND STRUCTURES.

SEC. 1. *Be it ordained by the board of commissioners of the city of Chattanooga,* That any unsafe building, staging, or other structure damaged from any cause, or which is otherwise in such condition as to render the same unhealthy or a menace to the health of the community or dangerous to life and limb, or a menace on account of fire which may originate on the inside thereof or on the outside thereof, so to be readily communicated with the same, is hereby declared to be a public nuisance, and the maintenance of the same shall be punished as herein provided.

SEC. 2. *Be it further ordained,* That when any building, staging, or other structure is found by the building inspector of the city of Chattanooga to be unsafe or dangerous for any reason, or in the condition set out in section 1 of this ordinance, he shall immediately report the same to the chief of the fire department and the commissioner of fire and police, and in the event said officials shall concur in the report of the said building inspector, the said building shall be condemned and notice of the said condemnation shall be given to the owner, agent, or person having charge or control of such building, staging, or other structure, stating that the same is unsafe, dangerous, or otherwise in the condition mentioned in section 1 of this ordinance, and giving to such owner, agent, or other person a reasonable time in which to remedy the condition of said building, or to destroy the same, if its destruction be necessary in the opinion of said building inspector, chief of the fire department, and the commissioner of fire and police.

SEC. 3. *Be it further ordained,* That any person or persons violating any of the provisions of this ordinance, or refusing or failing to comply with the requirements herein ordained, shall be deemed guilty of a misdemeanor, and upon conviction before the city judge, shall be fined not less than $2 nor more than $50.

SEC. 4. *Be it further ordained*, That all ordinances in conflict with the provisions herein, be, and the same are hereby, repealed.

SEC. 5. *Be it further ordained*, That this ordinance take effect from and after its passage, the public welfare requiring it. [Ordinance adopted Aug. 28, 1911.]

CINCINNATI, OHIO.

DRINKING WATER—POLLUTED NOT TO BE DISTRIBUTED OR KEPT FOR PUBLIC USE.

SEC. 1. The supplying and distribution or the keeping for public use of polluted drinking water, consumption of which would be dangerous to the public health, is prohibited.

SEC. 2. This order and regulation is hereby declared applicable to all common carriers of passengers and to any persons, firm, or corporation who may serve the public with drinking water as aforesaid.

SEC. 3. Whoever violates any provision of this order and regulation, or obstructs or interferes with the execution hereof, shall be fined not to exceed $100 or imprisoned for not to exceed 90 days, or both, but there shall be no imprisonment for a first offense, and each prosecution shall be as for a first offense, unless the affidavit upon which the prosecution is instituted, contains the allegation that the offense is a second or repeated offense.

SEC. 4. If such violation, obstruction, or interference be by a corporation, it shall forfeit and pay to the city of Cincinnati a sum not to exceed $300, to be collected in a civil action brought in the name of the municipality.

SEC. 5. Any officer of the city of Cincinnati having authority in the matter of this order and regulation who permits a violation hereof shall be subject to fine or imprisonment as provided in section 3 hereof.

SEC. 6. This order and regulation shall take effect and be in force from and after the earliest period allowed by law. [Resolution board of health, adopted Aug. 9, 1911.]

CLEVELAND, OHIO.

SIDEWALKS—CLEANING OF.

RESOLUTION No. 117. *Be it resolved by the board of health of the city of Cleveland*, That title 4 of the regulations of the board of health be supplemented by adding thereto the following section, numbered as follows:

SEC. 5. That on and after April 15, 1911, it shall be unlawful for the owner, lessee, or person in possession or control of any building or premises embraced within those sections of the city which are within the fire limits as defined by ordinance of council (said ordinances being Nos. 15711 and 7472A) to sweep or cause to be swept the sidewalk in front of or adjacent to said building or premises. The owner, lessee, or person in possession or control of said building or premises shall, between the 1st day of April and the 1st day of December of each year, excepting at times of freezing temperature, flush or cause to be flushed with water daily, before the hour of 7 a. m., the sidewalk fronting or adjacent to such building or premises.

Any person violating any of the provisions of this section shall be subject to the penalties provided in title 6 of the regulations of the board of health. [Resolution board of health, effective July 8, 1911.]

LAWRENCE, MASS.

MASSAGE, MANICURING, VAPOR BATHS—LICENSING OF PERSON PRACTICING.

REGULATION 84. In accordance with chapter 443 of the acts of 1911, all persons practicing manicuring, massage, or who conduct an establishment for giving vapor baths for hire or reward will receive a license from the board of health on presentation of a recommendation signed by an inspector of the health department, a police inspector, the city marshal, or a member of the board of health, on payment of a fee of $2.

All such licenses shall expire on the 31st day of December of each year without regard to the time of issuance. [Regulation board of health, adopted July 1, 1911.]

ST. PAUL, MINN.

REFUSE AND WASTE MATTER—DISPOSAL OF.

Sec. 1. No person shall remove, transport, or carry, by cart or otherwise, any dust, ashes, manure, grease, offal, rubbish, or waste matter whatsoever in the city of St. Paul, unless the same is so inclosed in a tight receptacle so as to be impervious to flies and to prevent its distribution by wind or otherwise; and no person shall remove, transport, or carry such waste matter for hire in said city without first obtaining a license so to do, as hereinafter provided.

Sec. 2. Any person desiring a license to remove, transport, or carry dust, ashes, manure, grease, offal, rubbish, or waste matter in the city of St.Paul, shall file with the commissioner of health of said city a written agreement to comply with all the ordinances of said city and the regulations of said commissioner relating to the removal of such matter. Said commissioner shall thereupon deliver to said person a license to engage in the removal of such matter for a period of one year, and suitable tags, one of which tags said person shall display in a conspicuous place on each side of each wagon used for said purpose.

Sec. 3. This ordinance shall not apply to the removal of garbage or night soil.

Sec. 4. Any person violating any of the provisions of this ordinance shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than $5 nor more than $25, or imprisoned for not less than 5 days nor more than 30 days for each offense.

Sec. 5. This ordinance shall take effect and be in force from and after its passage and publication. [Ordinance, adopted July 14, 1911.]

CEREBROSPINAL MENINGITIS IN TEXAS.

Cerebrospinal meningitis is present in numerous localities in Texas. No information as to its prevalence has been received since January 25, for which see Public Health Reports of January 26, page 128.

Surg. Guiteras at Galveston reports January 30 that the case suspected of being cerebrospinsal meningitis, which was reported January 20, has been confirmed, and that 2 new cases were reported January 27 and 2 new cases with 1 death January 29.

Surg. Guiteras further reported: Three new cases of cerebrospinal meningitis with 1 death were reported January 30, and on February 1, 2 new cases. The total number of cases reported since January 20 is 11, with 3 deaths.

Examination at Tampico of Vessels from Texas Ports.

The American consul at Tampico reports February 3 that all vessels arriving from Texas ports are being especially examined for cerebrospinal meningitis.

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,455 acres of land in Alameda County were covered with poison during the week ended January 20, 1912.

During the same period 6,900 acres of land in San Joaquin County and 7,280 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Place.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Jan. 20, 1912		[1] 135	85	
Fresno	do		[2] 77	77	
Oakland	do	92	[3] 658	387	
San Francisco	do	34	[4] 1,513	1,232	
Counties—					
San Joaquin	do		[5] 136	136	
Santa Clara	do		[6] 49	49	
Washington:					
City—					
Seattle	do		1,126	1,083	

[1] Identified: **Mus norvegicus**, 83; **Mus musculus**, 2.
[2] Identified: **Mus alexandrinus**, 61; **Mus musculus**, 11; unidentified, 5.
[3] Identified: **Mus norvegicus**, 569; **Mus musculus**, 87; **Mus rattus**, 1; **Mus alexandrinus**, 1.
[4] Identified: **Mus norvegicus**, 733; **Mus rattus**, 270; **Mus musculus**, 258; **Mus alexandrinus**, 252.
[5] Identified: **Mus norvegicus**, 124; **Mus alexandrinus**, 12.
[6] Identified: **Mus norvegicus**, 48; **Mus alexandrinus**, 1.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED FEB. 9, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Arizona:				
County—				
Greenlee	Nov. 1-30	1	1	
Colorado:				
Counties—				
Boulder	Jan. 1-31	1		
Denver	do	5		
Jefferson	do	1		
Larimer	do	1		
Montrose	do	3		
Pueblo	do	3		
Rio Grande	do	3		
Routt	do	1		
Weld	do	1		
Total for State		19		
Florida:				
Counties—				
Duval	Jan. 21-27	20		
Hernando	do	4		
Orange	do	4		
Total for State	do	28		
*Louisiana:				
New Orleans	Jan. 15-21	4		
Maryland	Dec. 1-31			No cases.
*Missouri:				
St. Louis	Jan. 1-27	20		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended Feb. 9, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Oklahoma:				
Counties—				
Beckham	Oct. 1-31	1		
Garfield	do	1		
Washington	do	1		
Total for State		3		
Mayes	Nov. 1-30	6		
Bryan	Dec. 1-31	4		
Comanche	do	5		
Delaware	do	6		
Dewey	do	1		
Nowata	do	1		
Total for State		17		
*Tennessee:				
Knoxville	Jan. 21-27	3		
Utah:				
Counties—				
Box Elder	Dec. 1-31	10		
Cache	do	9		
Carbon	do	1		
Juab	do	15		
Salt Lake	do	32		
San Pete	do	4		
Sevier	do	12		
Uintah	do	55		
Utah	do	21		
Wasatch	do	27		
Weber	do	28		
Total for State		214		
Grand total for the United States		315	1	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED JAN. 20, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	247	30	6	13	....	26	1	....	....	38	23	9	2
Boston, Mass	670,585	268	40	4	142	1	22	....	1	....	33	28	2	1
Chicago, Ill	2,185,283	746	143	11	56	2	137	7	....	....	164	92	22	3
Cleveland, Ohio	560,663	149	17	3	32	....	37	2	....	....	36	16	1	....
New York, N. Y	4,766,883	1,578	238	31	610	6	248	5	1	....	435	171	87	9
Philadelphia, Pa	1,549,008	599	78	15	20	2	36	2	....	....	69	60	43	12
Pittsburgh, Pa	533,905	185	22	5	11	1	12	....	....	....	38	15	5	....
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	111	30	1	11	....	26	1	....	....	12	5	6	2
Cincinnati, Ohio	364,463	145	12	....	4	....	21	1	1	....	28	20	1	....
Detroit, Mich	465,766	169	24	2	....	....	27	2	5	....	....	....	....	....
Los Angeles, Cal	319,198	121	12	1	3	....	12	....	7	....	42	22	....	....
Milwaukee, Wis	373,857	133	15	3	28	1	30	1	....	....	18	7	17	4
Newark, N. J	347,469	129	17	2	....	1	17	....	....	....	20	14	....	....
New Orleans, La	339,075	158	3	1	2	....	15	....	....	....	34	17	6	....
San Francisco, Cal	416,912	....	8	....	234	4	9	....	....	....	33	14	3	....
Washington, D. C	331,069	160	15	....	....	....	9	....	....	....	19	13	9	2
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	45	20	1	5	....	6	....	3	....	....	9	....	....
Jersey City, N. J	267,779	87	....	....	....	....	....	....	....	....	....	....	....	....
Kansas City, Mo	248,381	26	3	1	....	....	1	1	2	....	3	7	....	....
Providence, R. I	224,326	93	17	5	3	1	13	....	....	....	....	10	....	....
Seattle, Wash	237,194	40	6	....	5	....	7	....	2	....	....	4	....	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	37	1	....	....	....	4	....	....	....	1	3	....	....
Cambridge, Mass	104,839	....	6	....	1	....	6	....	....	....	3	6	....	....
Columbus, Ohio	181,548	44	10	1	17	....	11	....	1	....	....	4	1	....
Dayton, Ohio	116,577	35	6	....	3	....	3	....	....	....	....	4	3	....
Fall River, Mass	119,295	47	1	....	....	....	3	....	....	....	4	3	....	....
Grand Rapids, Mich	112,571	37	....	....	1	....	5	....	....	....	1	1	5	....
Lowell, Mass	106,294	....	6	....	13	1	6	....	....	....	1	3	....	....
Nashville, Tenn	110,364	41	3	....	....	....	2	....	....	....	4	7	3	1
Oakland, Cal	150,174	47	....	....	....	....	1	....	....	....	....	2	....	1
Omaha, Nebr	124,096	45	1	1	....	....	1	....	4	....	....	5	....	....
Richmond, Va	127,628	....	6	....	2	....	4	....	....	....	2	6	....	....
Spokane, Wash	104,402	....	....	....	9	....	2	....	7	....	....	1	....	....
Toledo, Ohio	168,497	67	9	4	15	....	12	....	....	....	....	1	9	1
Worcester, Mass	145,986	41	7	....	3	....	21	....	....	....	10	2	1	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	18	1	....	....	....	3	....	....	....	....	....	....	....
Bayonne, N. J	55,545	16	....	1	....	....	....	....	....	....	....	1	....	....
Brockton, Mass	56,878	15	....	....	50	....	1	....	....	....	4	2	....	....
Camden, N. J	94,538	....	4	1	....	....	3	....	....	....	....	....	....	....
Duluth, Minn	78,466	31	1	....	....	....	2	....	2	....	4	3	1	1
Elizabeth, N. J	73,409	39	4	....	9	....	6	1	....	....	2	8	1	....
Evansville, Ind	69,647	17	....	....	....	....	1	....	....	....	1	....	2	....
Harrisburg, Pa	64,186	21	6	....	3	....	6	....	....	....	6	4	....	....
Hartford, Conn	98,915	24	8	1	....	....	9	....	....	....	2	....	....	....
Hoboken, N. J	70,324	....	3	1	1	....	....	....	....	....	2	....	....	....
Houston, Tex	78,800	42	5	....	....	....	1	....	....	....	....	2	....	....
Johnstown, Pa	55,482	20	2	....	....	....	....	....	....	....	....	1	....	....
Kansas City, Kans	82,331	....	2	....	....	....	....	....	1	....	2	....	....	....
Lawrence, Mass	85,892	27	....	....	1	....	....	....	....	....	2	....	....	....
Lynn, Mass	89,336	33	1	....	1	....	4	....	....	....	2	....	1	....

MORBIDITY AND MORTALITY—Continued.

***Morbidity and mortality table, cities of the United States, for week ended Jan. 20, 1912*—Continued.**

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Con.														
Manchester, N. H	70,063	36	3	....	13	....	1	....	....	....	1	1	....	....
New Bedford, Mass	96,652	35	4	....	4	....	2	....	....	....	5	4	1	1
Oklahoma City, Okla	64,205	16	2	....	....	....	....	....	....	....	6	2	2	....
Passaic, N. J	54,773	15	3	....	3	....	1	2	....	....	....	3	....	....
Reading, Pa	96,071	27	7	4	1	....	5	....	....	....	....	....	3	....
St. Joseph, Mo	77,403	12	....	....	....	....	....	....	....	....	....	....	1	2
San Antonio, Tex	96,614	53	1	....	12	....	3	....	....	....	4	9	5	2
Schenectady, N. Y	72,826	28	1	....	2	....	2	....	....	....	1	2	....	....
South Bend, Ind	53,684	12	2	....	....	....	....	....	....	....	....	....	4	....
Springfield, Ill	51,678	7	2	....	....	....	2	....	1	....	....	....	1	....
Springfield, Mass	88,926	22	....	....	26	....	4	....	....	....	1	1	1	....
Trenton, N. J	96,815	45	....	....	....	....	3	....	....	....	4	4	2	....
Wilkes-Barre, Pa	67,105	30	2	....	342	1	....	....	....	....	1	2	1	....
Yonkers, N. Y	79,803	23	1	....	6	....	....	....	13	1	6	2	5	....
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	....	1	....	....	....	3	....	....	....	....	....	....	....
Auburn, N. Y	34,668	12	....	....	....	....	....	....	....	....	....	3	....	1
Aurora, Ill	29,807	11	....	....	....	....	....	....	....	....	....	2	....	....
Berkeley, Cal	40,434	8	....	....	8	....	....	....	....	....	2	2	....	....
Binghamton, N. Y	48,443	24	1	....	....	....	2	....	....	....	1	....	....	....
Brookline, Mass	27,792	10	2	....	1	....	....	....	....	....	....	....	1	....
Butte, Mont	39,165	16	....	....	....	....	6	1	....	....	....	2	....	....
Chattanooga, Tenn	44,604	....	....	....	....	....	1	....	....	....	3	....	2	....
Chelsea, Mass	32,452	19	....	....	4	....	1	....	1	....	2	....	1	....
Chicopee, Mass	25,401	8	....	....	1	....	....	....	....	....	....	1	....	....
Danville, Ill	27,871	6	2	1	....	....	2	....	....	....	....	1	....	....
Dubuque, Iowa	38,494	8	....	....	....	....	....	....	....	....	....	....	....	....
East Orange, N. J	34,371	4	1	....	....	....	2	....	....	....	....	....	....	....
Elmira, N. Y	37,176	15	2	....	....	....	....	....	....	....	2	....	....	1
El Paso, Tex	39,279	31	....	....	....	....	6	1	1	....	....	5	4	1
Everett, Mass	33,484	9	....	....	2	....	2	....	....	....	1	1	....	....
Fitchburg, Mass	37,826	11	4	....	....	....	....	....	....	....	2	1	....	....
Haverhill, Mass	44,115	18	8	1	12	....	....	....	....	....	....	1	2	1
Kalamazoo, Mich	39,437	16	1	....	....	....	3	....	....	....	2	1	....	....
Knoxville, Tenn	36,346	18	1	1	....	....	....	....	1	....	....	3	....	....
La Crosse, Wis	30,417	8	1	....	....	....	....	....	....	....	2	2	1	....
Lancaster, Pa	47,227	....	....	....	....	....	1	....	....	....	....	....	....	....
Lexington, Ky	35,099	21	2	2	28	....	2	....	....	....	....	....	....	....
Lynchburg, Va	29,494	19	....	....	8	....	1	....	....	....	1	....	....	....
Malden, Mass	44,404	8	5	....	1	....	4	....	....	....	....	1	....	....
Montgomery, Ala	38,136	15	1	....	5	....	1	....	....	....	2	3	1	....
Mount Vernon, N. Y	30,919	....	2	....	28	....	....	....	....	....	....	....	....	....
Newcastle, Pa	36,280	....	1	....	....	....	....	....	....	....	....	....	6	....
Newport, Ky	30,309	14	2	....	....	....	1	....	....	....	2	2	....	....
Newton, Mass	39,806	11	....	....	7	....	1	....	....	....	2	....	....	....
Niagara Falls, N. Y	30,445	9	4	....	....	....	....	....	....	....	....	1	11	1
Norristown, Pa	27,875	14	....	....	25	....	....	....	....	....	....	....	....	....
Orange, N. J	29,630	11	2	....	1	....	5	....	....	....	....	1	....	....
Pasadena, Cal	30,291	13	....	....	....	....	....	....	....	....	....	3	....	....
Pittsfield, Mass	32,121	6	....	....	....	....	2	....	....	....	....	1	....	....
Portsmouth, Va	33,190	16	1	....	....	....	1	....	3	....	....	1	....	....
Racine, Wis	38,002	9	6	....	....	....	2	....	....	....	....	2	....	....
Roanoke, Va	34,874	12	1	....	27	....	2	....	....	....	3	2	....	....
Rockford, Ill	45,401	11	1	....	....	....	1	....	....	....	....	....	....	....
Salem, Mass	43,697	13	....	....	....	....	....	....	....	....	....	....	....	....
San Diego, Cal	39,578	....	1	....	....	....	1	....	1	....	2	2	....	....
South Omaha, Nebr	26,259	5	....	....	....	....	....	....	....	....	....	....	....	....
Superior, Wis	40,384	16	1	1	....	....	....	....	3	....	....	1	....	....
Taunton, Mass	34,259	13	....	....	....	....	3	....	....	....	....	....	....	....
Waltham, Mass	27,834	8	....	....	6	....	....	....	....	....	2	4	....	....
West Hoboken, N. J	[illegible]	[illegible]	3	....	....	....	2	....	....	....	1	....	....	....
Wheeling, W. Va	[illegible]	[illegible]	....	....	....	....	....	....	....	....	2	2	2	....
Wilmington, N. C	[illegible]	[illegible]	....	....	....	....	....	....	....	....	....	4	....	1
Zanesville, Ohio	[illegible]	[illegible]	4	....	....	....	....	....	....	....	....	1	6	1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 20, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	4					3						1	
Beaver Falls, Pa	12,191						5				2		2	
Bennington, Vt		4												
Biddeford, Me	17,079	2	1	1			1							
Braddock, Pa	19,957	11										1		
Butler, Pa	20,782	9	3								3		1	
Cambridge, Ohio	11,327	6										2		
Carbondale, Pa	17,040	7					1							
Clinton, Mass	13,075	11										1		
Coffeyville, Kans	12,687												1	
Columbus, Ga	20,554	12										1		
Columbus, Ind		7							6		1	3		
Concord, N. H	21,497	5	1		1		1							
Cumberland, Md	21,839	14	6								1	1	8	2
Dunkirk, N. Y		3							2					
Galesburg, Ill	22,089	12	1									1		
Harrison, N. J	14,498	3	1											
Homestead, Pa	18,713	4	2	1			1							
Kearny, N. J	18,659	7		1										
Kokomo, Ind	17,010	6		1					5					
La Fayette, Ind	20,081	4	1				1							
Lebanon, Pa	19,240		5											
Manistee, Mich	12,381						3							
Marinette, Wis	14,610				6								1	1
Marlboro, Mass	14,579	5	1				1				1	1		
Massillon, Ohio		3	1						1					
Medford, Mass	23,150	10			1		1				1			
Melrose, Mass	15,715	3			23						1			
Moline, Ill	24,199	6	1								1			
Montclair, N. J	21,150	5					3				3			
Morristown, N. J	12,507	4									1			
Nanticoke, Pa	18,857	8			22									
Newburyport, Mass	19,240	6	2								1			
North Adams, Mass	22,012	10	2		2									
Northampton, Mass	19,431	8	2		3		1					1		
Ottumwa, Iowa	22,012	12										1		
Palmer, Mass		3												
Peekskill, N. Y		4			3									
Plainfield, N. J	22,550	7									1	1		
Pottstown, Pa		5			1		1							
Saratoga Springs, N. Y		5										1		
South Bethlehem, Pa	19,973	14	2	1	18	1						2	2	1
Steelton, Pa	14,246	4	1	1					6		2			
Warren, Pa	11,081	1	1											
Wilkinsburg, Pa	18,924	3			2									
Woburn, Mass	15,308	7			1							2		

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

Florida.—Week ended January 27, 1912. Reports from the State board of health show diphtheria present in 3 localities with 6 cases, malaria in 6 localities with 11 cases, smallpox in 3 counties with 28 cases, tuberculosis in 6 localities with 15 cases, typhoid fever in 6 localities with 16 cases.

Maryland.—Month of December, 1911. Population, 1,295,346. The deaths include diphtheria 10, measles 1, scarlet fever 2, tuberculosis 63, typhoid fever 21. Cases reported: Diphtheria 117, measles 9, scarlet fever 97, typhoid fever 175. The cases of typhoid fever were distributed as follows: Potomac River watershed 84, Patuxent River watershed 11, Herring Run watershed 5, Baltimore city water system 2.

Michigan.—Month of December, 1911. Population, 2,810,173. Total number of deaths from all causes 2,859, including diphtheria 46, measles 9, scarlet fever 9, tuberculosis 197, typhoid fever 39.[1]

Minnesota.—Month of October, 1911. Population, 2,075,708. Total number of deaths from all causes 1,442, including diphtheria 22, measles 1, scarlet fever 7, tuberculosis 164, typhoid fever 34.

New York.—Month of November, 1911. Population, 9,113,614. Total number of deaths from all causes 10,629, including diphtheria 161, measles 13, scarlet fever 38, smallpox 5, tuberculosis 1,237, typhoid fever 114. Cases reported: Diphtheria 1,976, measles 1,465, scarlet fever 1,260, smallpox 24, tuberculosis, pulmonary, 2,692, typhoid fever 781.

Oklahoma.—Month of October, 1911. Population, 1,657,155. Total number of deaths from all causes 777, including diphtheria 24, scarlet fever 1, tuberculosis 39, typhoid fever 92. Cases reported: Diphtheria 279, scarlet fever 69, smallpox 3, tuberculosis 56, typhoid fever 467.

Month of November, 1911. Total number of deaths from all causes 758, including diphtheria 31, scarlet fever 7, tuberculosis 40, typhoid fever 57. Cases reported: Diphtheria 271, scarlet fever 97, smallpox 6, tuberculosis 80, typhoid fever 328.

Month of December, 1911. Total number of deaths from all causes 794, including diphtheria 28, scarlet fever 6, tuberculosis 244, typhoid fever 36. Cases reported: Diphtheria 178, scarlet fever 132, smallpox 17, tuberculosis 69, typhoid fever 204.

Utah.—Month of December, 1911. Population, 373,351. Total number of deaths from all causes 304, including diphtheria 7, scarlet fever 4, tuberculosis 16, typhoid fever 3, Cases reported: Diph-t[illegible] measles 157, scarlet fever 152, smallpox 214, tuberculosis 1[illegible] lete), typhoid fever 14.

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[1] [illegible] ble diseases, December, 1911, see Public Health Reports, February 2, 1912, page 174.

FOREIGN AND INSULAR.

BRAZIL.

Rio de Janeiro—Plague.

Consul General Lay reports the occurrence of 3 cases of plague with 2 deaths at Rio de Janeiro during the two weeks ended December 23, 1911.

CANARY ISLANDS.

Santa Cruz de Teneriffe—Typhus Fever.

Consul Kitchin reports the occurrence of 2 deaths from typhus fever during the two weeks ended January 13, 1912.

CHINA.

Hongkong—Plague.

Surgeon Brown reports: During the week ended December 3, 1911, 2 cases of plague with 1 death were reported at Hongkong.

GREECE.

Athens—Cerebrospinal Meningitis.

Consul General Gale reports January 8 the presence of cerebrospinal meningitis in Athens and vicinity. From two to three cases were stated as occurring daily in the city and during the week ended December 30, 1911, about 12 cases were reported in the vicinity.

HAWAII.

Mosquito-Eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy:

Mosquito-eradication measures conducted at Honolulu for the week ended Jan. 6, 1912.

Inspections of—	Total inspections.	Larvæ found in—	Cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled.	Ordered repaired.	Screened.	Stocked with fish that destroy mosquito larvæ.
Gutters:											
House	1,656	38	607	1,197							
Street	139	14		73	18						
Standing water	706	98		636	13						
Cesspools	779	20		725					2	13	
Privy vaults	929	38		851					3		
Holes and low places	358	38		189				162			
Catch basins	241	3		145		92			20		
Leaky fixtures	140	1		68					97		
Swamps	18	3		3	6						3
Ponds	17	4		7	1						4
Troughs and tanks	95	23		20		72					
Tubs and other receptacles	444	35				416					
Tin cans, bottles, etc	1,705	25					1,705				
Water barrels	231	34		77		125				50	
Vacant houses		7		3							
Holes in trees	1,088	53						1,088			

ITALY.

Status of Cholera.

During the week ended December 31, 1911, 1 case of cholera was reported in the Province of Caltanisetta, and in the Province of Girgenti there were reported 5 cases, with 1 death occurring in 2 localities.

Naples—Examination of Emigrants.

Surgeon Geddings reports:

Vessels inspected at Naples and Palermo, week ended January 6, 1912:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Dec. 31	Oceania	New York	487	135	680
Jan. 3	Duca d'Aosta	Philadelphia	460	120	730
5	Berlin	New York	774	195	870
	Total		1,721	450	2,280

PALERMO.

Jan. 2	Argentina	New York			

Vessels inspected at Naples and Palermo week ended January 13, 1912:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Jan. 9	Sant' Anna	New York	332	70	480
9	Cincinnati	do	430	65	510
10	Ancona	do	315	45	420
13	Dinnamare	New Orleans			
	Total		1,077	180	1,410

PALERMO.

Jan. 9	Mrav	New Orleans			
10	Sant' Anna	New York	230	85	280
	Total		230	85	280

JAMAICA.

Kingston—Beriberi.

Consul Snyder reports the occurrence of 2 deaths from beriberi at Kingston during the week ended December 31, 1911.

MEXICO.

Typhus Fever.

Consul Schmulz at Aguascalientes reports the occurrence of 2 deaths from typhus fever during the week ended January 14.

Consul General Shanklin at Mexico City reports the occurrence of 81 cases of typhus fever, with 16 deaths, during the two weeks ended December 30, 1911.

Yellow Fever at Merida.

During the week ended January 20, 2 new cases of yellow fever were reported at Merida. The total number of cases reported from August 1, 1911, to January 20 is 55, with 27 deaths.

SERVIA.

Declared free from Cholera.

According to information received from the Servian foreign office, Servia was officially declared free from cholera December 31, 1911.

SWEDEN.

Poliomyelitis.

According to reports made by district physicians to the royal medical department, the total number of cases of poliomyelitis in Sweden during the year 1911 was approximately 3,520. In the year 1906, when a more extensive epidemic than any previously reported prevailed in Sweden, the total number of reported cases was 1,025.

TURKEY IN ASIA.

Aleppo—Cholera.

The American consul reported January 26 the presence of cholera at Aleppo.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED FEB. 9, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Madras	Dec. 24-30	51	46	
Italy				Total Dec. 24-31: Cases 6, deaths 1.
Provinces—				
Caltanisetta	Dec. 24-31	1		
Girgenti	do	5	1	
Java:				
Batavia	Dec. 17-23	3	1	
Roumania:				
Districts—				
Braila	Oct. 31-Dec. 13	22	11	
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 2-Dec. 13	14		
Konstanza	Oct. 30-Nov. 28	4		
Tulcea	Oct. 31-Dec. 13	13	2	
Servia				Declared free Dec. 31.
Belgrade, district	Nov. 26-Dec. 16		1	
Turkey in Asia:				
Aleppo	Jan. 26			
Kharput	Dec. 17-30	9	7	
Tripoli	Jan. 4	1		Present.
Turkey in Europe:				
Constantinople	Jan. 2	1		
Durazzo	Dec. 7-13	2		

YELLOW FEVER.

Mexico:				
Merida	Jan. 14-20	2		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended Feb. 9, 1912.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Chile:				
Iquique	Jan. 1-6	1		
Pisagua	Nov. 1-30	8		
China:				
Hongkong	Dec. 17-23	2	1	
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
India:				
Bombay	Dec. 24-30	13	14	
Karachi	do	6	6	
Java:				
Pasoeroean Residency	Dec. 17-23	9	3	
Straits Settlements:				
Singapore	Dec. 10-16	2	2	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	Dec. 19-Jan. 1	3	1	
Canada:				
Montreal	Jan. 21-27	5		
Ottawa	Jan. 14-20	14		
Quebec	Jan. 21-27	23		
Winnipeg	Jan. 14-20	1		
Chile:				
La Serena	Nov. 21-30	14		
China:				
Hongkong	Dec. 17-23	11	9	
Cuba:				
Habana	Jan. 19	1		From steamship Mexico.
France:				
Paris	Jan. 7-13	7		
Germany	do	1		
India:				
Bombay	Dec. 24-30	4	2	
Madras	do	4	3	
Italy:				
Genoa	Jan. 1-15	14		
Leghorn	Jan. 17-23	10		
Messina	Nov. 19-Dec. 31		5	
Naples	Jan. 1-6	5		
Palermo	Jan. 1-13	389	134	
Java:				
Batavia	Dec. 17-23	3	1	
Mexico:				
Guadalajara	Jan. 14-20		1	
Mazatlan	Dec. 19-23		1	
Mexico	Dec. 17-30	18	8	
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Spain:				
Cadiz	Dec. 1-31		9	
Valencia	Jan. 6-12	27	3	
Straits Settlements:				
Singapore	Dec. 10-16	2	1	
Teneriffe:				
Santa Cruz	Jan. 1-13		2	
Turkey in Asia:				
Beirut	do	75	12	
Turkey in Europe:				
Constantinople	Jan. 8-14		4	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

REPORTS RECEIVED FROM DEC. 30, 1911, TO FEB. 2, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Ras-el-Ketib	Dec. 27		2	In the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37.
Backs-Bodog	Dec. 10-16	9		
Jasz-Nagykun-Szolnok	Dec. 3-23	11		
Torontal	Nov. 19-Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24-Oct. 9: Cases, 322; deaths, 256.
Batavia	Nov. 12-Dec. 18	18	7	
India:				
Calcutta	Nov. 5-Dec. 9		204	
Madras	Nov. 26-Dec. 16	296	231	Madras Presidency, Dec. 1-31: Cases, 3,879; deaths, 2,412.
Rangoon	Oct. 1-Nov. 30	6	3	
Indo-China:				
Saigon	Nov. 20-Dec. 17	203	169	
Italy				Total June 8-Dec. 24: Cases, 15,979; deaths, 6,021.
Provinces—				
Caltanisetta	Nov. 26-Dec. 23	8	7	
Girgenti	do	100	56	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 193, deaths, 42, including cases previously reported.
Districts—				
Braila	Nov. 24-Dec. 13	1		Nov. 6-23: 1 death.
Doliju	Nov. 6-Dec. 13	4	4	
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	1	1	
Siam:				
Bangkok	Nov. 5-Dec. 2		149	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	
Tripoli:				
Tripoli	Oct. 25-Nov. 10			150 to 200 among the civil population and 25 to 30 among the military, Dec. 21, 1911.
Tunis Regency				Total Nov. 25-Dec. 21: Cases, 326; deaths, 371.
Beja district	Nov. 25-Dec. 7	30	35	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia:				
Adana	Dec. 2-6	16	5	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 9	29	22	
Jiddah	Dec. 2-24	323	210	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,848; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	
Turkey in Europe:				
Constantinople	Oct. 24-30	5	1	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Feb. 2, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	Nov. 19–Jan. 6		8	
Para	Dec. 9–16	1	1	
Ecuador:				
Bucay	Nov. 16–30	2		
Duran	Dec. 1–15	3	2	
Guayaquil	Nov. 16–Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Espita	Dec. 31–Jan. 6	1		
Maxcanu	do	1		
Merida	Nov. 12–Jan. 6	8	7	Total Aug. 1–Jan. 20: Cases 55; deaths, 27.
Temax	Dec. 31–Jan. 6	1		
Vensuela:				
Caracas	Nov. 16–Dec. 7	11		
Sabana Grande	Dec. 12			Epidemic.
At sea	Dec. 17–23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096. Vol. XXVI.
Brazil:				
Bahia	Sept. 1–30		2	
Para	Dec. 24–30	5	1	
Pernambuco	Oct. 16–Jan. 16		4	
Rio de Janeiro	Nov. 12–Dec. 23	6	3	
British East Africa:				
Kismayu	Oct. 15–25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12–Dec. 23	9	4	
China:				
Amoy	Jan. 15			Present.
Hongkong	Dec. 9–16	1	1	
Dutch East Indies:				
Java				Total Mar. 1–Dec. 9: Cases, 1,777; deaths, 1,262.
Pasoeroean Residency, Malang District.	Nov. 12–Dec. 18	41	19	
Soerobaya	Oct. 17–27	2		
Ecuador:				
Guayaquil	Nov. 16–Dec. 15	102	42	
Egypt				Total Jan. 1–Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Oct. 14–Dec. 27	38	36	
Behera	Oct. 15–Dec. 26	3	1	
Galioubeh	Oct. 5–Dec. 26	1		
Kena	Nov. 20–Dec. 13	3	3	
Minieh	Dec. 13	1		
India:				
Bombay	Nov. 19–Dec. 23	44	39	
Calcutta	Nov. 11–Dec. 9		30	
Karachi	Nov. 26–Dec. 21	9	8	
Rangoon	Oct. 1–Nov. 30	38	39	
Bombay Presidency and Sind.	Oct. 29–Dec. 9	27,376	19,684	
Madras Presidency	do	3,589	2,886	
Bengal	do	1,537	1,136	
United Provinces	do	6,139	4,975	
Punjab	do	820	579	
Burma	do	90	84	
Central Provinces	do	3,806	2,838	
Coorg	do	45	22	
Mysore State	do	3,600	2,787	
Hyderabad State	do	6,012	5,651	
Central India	do	3,403	2,825	
Rajputana and Ajmere Merwara.	do	302	246	
North West Province	do	1	1	Total for India, Oct. 29–Dec. 9: Cases, 56,717; deaths, 43,714.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Feb. 2, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indo-China:				
Saigon	Nov. 13-Dec. 17	12	5	
Mauritius	Nov. 3-23	13	8	
Natal:				
Durban	Jan. 17		1	
Peru:				
Salaverry	Dec. 25-Jan. 9			Present in vicinity.
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Nov. 28-Dec. 20	87	84	
Siam:				
Bangkok	Nov. 4-Dec. 2	5	5	
Straits Settlements:				
Singapore	Nov. 5-Dec. 9	10	9	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Arabia:				
Aden	Nov. 28-Dec. 18	1	1	
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	Oct. 1-Nov. 30		31	
Austria-Hungary:				
Galicia	Dec. 24-30	1		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Nov. 30		246	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Dec. 2	1	1	
Canada:				
British Columbia—				
Nelson	Dec. 24-30	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Jan. 13	21		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-13		1	
Quebec—				
Montreal	Dec. 17-Jan. 20	3		
Quebec	Dec. 10-Jan. 13	137	1	
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Iquique	Dec. 10-16	2		
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		
China:				
Canton	Nov. 11-Dec. 16	25	4	
Chungking	Nov. 18-25			Present.
Hongkong	Nov. 12-Dec. 16	43	32	
Nanking	Dec. 10-16			Do.
Shanghai	Dec. 11-17		1	
Cuba:				
Habana	Dec. 19	1		From German s. s. Frankenwald from Spain and Canary Islands.
Egypt:				
Cairo	Dec. 10-16	1		
France:				
Marseille	Nov. 1-30		1	
Paris	Dec. 3-Jan. 6	36	2	
Germany	Dec. 31-Jan. 6	1		
India:				
Bombay	Nov. 19-Dec. 23	40	22	
Calcutta	do		16	
Madras	Nov. 26-Dec. 9	18	10	
Rangoon	Oct. 1-Nov. 30	29	9	
Indo-China:				
Saigon	Nov. 13-Dec. 10	18		
Italy:				
Genoa	Dec. 1-15	6	1	
Leghorn	Dec. 16-Jan. 6	46	1	
Naples	Dec. 3-30	31	1	
Palermo	Nov. 26-Dec. 30	1,263	412	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Feb. 2, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Java:				
Batavia	Nov. 12-Dec. 18	12	3	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Jan. 7		2	
Chihuahua	Nov. 20-Jan. 14	62	19	
Coahuila, State	Oct. 1-30		16	
Juares	Dec. 19-Jan. 20	5	2	
Magdalena	Dec. 23-Jan. 20		30	Dec. 23-Jan. 8, 99 cases.
Mazatlan	Dec. 11-Jan. 2		4	
Mexico	Nov. 26-Dec. 16	16	10	
Monterey	Dec. 11-24		2	
Porfirio Dias	Dec. 3-Jan. 22		26	
Sandoval	Dec. 16			Present.
San Ignacio	Jan. 8	3		
Santa Ana	do	4		
San Luis Potosi	Nov. 12-Dec. 2	3		
Tampico	Dec. 1-31	4	4	
Tapachula	Nov. 1-Dec. 31		14	
Portugal:				
Lisbon	Dec. 9-Jan. 6	19		
Russia:				
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Dec. 23	12	4	
Odessa	Nov. 26-Dec. 23	7	1	
Reval	Nov. 1-30	1		
St. Petersburg	Nov. 19-Dec. 30	84	9	
Warsaw	Nov. 5-Dec. 2		185	
Spain:				
Cadiz	Nov. 1-30		5	
Madrid	Dec. 1-31		1	
Malaga	Nov. 1-30		45	
Sevilla	Dec. 1-31		5	
Valencia	Dec. 3-Jan. 6	45	6	
Straits Settlements:				
Singapore	Nov. 19-Dec. 9	7	1	
Switzerland:				
Zurich, Canton	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-30		27	
Turkey in Asia:				
Beirut	do	40	13	
Turkey in Europe:				
Constantinople	Dec. 4-Jan. 7		26	
Uruguay:				
Montevideo	Sept. 1-Oct. 31	19	3	
Venezuela:				
Caracas	Nov. 1-Dec. 31	11		
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aden	Dec. 25	45,859	22	2										
Do	Jan. 1		30	9				1						
Aguascalientes	Jan. 14	40,000	46	2					2					
Aix-le-Chapelle	Dec. 30	156,486	45	7								3	6	
Athens	Jan. 8	250,010	22								3			
Barcelona	Jan. 5-17	591,272	510	48						12			14	3
Beirut	Jan. 6	80,000	22					5		2				
Do	Jan. 13		25	2				7		2				
Belgrade	do	90,050	21								2	1		
Belfast	do	385,492	146	14					1					1
Berlin	Jan. 6	2,083,243	543	80							8	18	3	4
Bombay	Dec. 30	977,822	724	48	14			2						3
Bordeaux	Jan. 13	253,000	113	17						1			3	
Bradford	do	289,613	79	8								3	1	
Bremen	Dec. 30	246,850	57	5							1	4	2	
Do	Jan. 6		65	7							3	3	3	
Bristol	Jan. 20	359,400	107	12								2	1	
Brunswick	Jan. 6	145,000		2							4	24		
Brussels	Jan. 13	739,684	186	20						2		2	1	2
Budapest	Dec. 23	1,000,000								1	6	3	6	
Do	Dec. 30									2	6	3	13	
Do	Jan. 6										4	1	9	
Cairo	Dec. 23	689,439	414	23						2		10		
Do	Dec. 31		527	32				1	3	4		7		
Christiana	Jan. 13	245,000	52	8							3		1	
Coburg	Dec. 31	24,313	8									1		
Do	Jan. 13		5						1					
Cologne	Jan. 6	524,847	149	17							1	1	5	
Do	Jan. 13		154	19							2	2	4	4
Colombo	Dec. 16	213,974	176	12						10			1	
Constantinople	Jan. 14	1,000,000	317	32				4		1	6		4	
Dresden	Dec. 23	555,500	141	26							1	2		1
Do	Dec. 30		164	18							1	2		1
Do	Jan. 6		144	18							2	5		
Edinburgh	Jan. 13	321,200	120	12								3	5	1
Frankfort-on-Main	Dec. 30	419,300	99									1		2
Do	Jan. 6		98									2		
Glasgow	Jan. 12	785,600	261								3	7	18	3
Do	Jan. 13		317							2	3	3	23	7
Guadalajara	Jan. 20	119,468	59					1						
Halifax	do	41,000	27	3							1			
Do	Jan. 27		14	1										
Hongkong	Dec. 23	336,488			1			9				1		
Hull	Jan. 13	282,987	90							1				1
Iquique	Dec. 30	40,000		6						1				
Batavia	Dec. 23	217,630			3	1		1	1					
Kharput	do	21,000				5				1				
Do	Dec. 30					2								
Kingston	Jan. 13	59,584							1					
Konigsberg	Dec. 30	251,000	113	13								4	4	7
Do	Jan. 6		96	18						1		1	5	2
Karachi	Dec. 30	148,000	91		6									
Leipsig	do	595,703	172	23					1			2		1
Do	Jan. 6	605,755	162	25					1	2			1	1
Leith	Jan. 13	77,439	20	3									1	
London	do	7,340,125	1,865							3	4	18	12	19
Lubeck	Jan. 6	100,000	28	1								1	1	
Madras	Dec. 30	518,660	567			46		3					1	
Magdeburg	Dec. 23	285,522	137	4							3	4	2	4
Do	Dec. 30		96	8							1	6		
Do	Jan. 6		176	3						1	3	5		2
Manchester	Jan. 13	631,533	251	23								1	7	1
Maracaibo	Jan. 10	50,000	14	1						1				
Mazatlan	Jan. 23	22,000	19	1				1						
Mexico	Dec. 23	719,052	371					6	10		4			3
Do	Dec. 30		309	24				2	6		1	2	4	1
Moncton	Jan. 27	11,329										1		
Monterey	Jan. 21	100,000	45	7						1				
Montreal	Jan. 27	466,197	169	13							2	4	1	2

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Munich	Dec. 30	597,000	177	28							1	3	2	1
Newcastle-on-Tyne	Jan. 13	269,193	104	9						1	4	3		1
Ottawa	Jan. 20	90,000	22									2		
Palermo	Jan. 6	340,000	254	8				80	1	1	2	1		
Do	Jan. 13		207	8				54		1	1			
Paris	do	2,847,000	988	217						4	2	6	8	3
Port Said	Dec. 23	52,811	18							1				
Do	Dec. 31		32									1		
Prague	Dec. 30	225,204	72	11							4	3		
Do	Jan. 6		73	9						1			7	
Rangoon	Dec. 23	289,432	188		3	8		2						
Do	Dec. 30		189		3	13		4						
Rotterdam	Jan. 13	436,015	109							2	1			
Santa Cruz de Teneriffe	Jan. 6	46,000	21	2			1	2						
Do	Jan. 13		16				1	2		1				
Sarnia	Jan. 27	9,936	12	2						1				
Singapore	Dec. 16	303,328	205	24	2			1						
Southampton	Jan. 13	120,891	38	3						1				1
Do	Jan. 20		28	5										1
Stettin	Jan. 6	237,000	68	5								1		
Do	Jan. 13		95	9							1	2	1	
Stoke-on-Trent	do	237,153	100	3						1		1	2	2
Swansea	do	115,100	31									2	1	
Talcahuano	Dec. 30	28,000	7	2							1		2	1
Do	Jan. 6		3	2										
Tapachula	Dec. 31	25,000	45	1				1						2
Toronto	Jan. 27	392,000	126	12						1	2	4	1	
Trieste	Dec. 23	233,925	85										1	1
Trinidad	Jan. 13	60,000	37	4						1				
Turin	Jan. 14	401,555	119	8									1	
Valencia	Jan. 13	240,000	131	7				3			1	2		
Vienna	Dec. 23	2,064,583	586	100							4	4	11	7
Do	Dec. 13		622	93						1	2	12	6	4
Do	Jan. 6		599	76						2	6	4	5	4
Winnipeg	Jan. 20	151,958	37	1							2	2		
Yokahama	Jan. 8	419,630								1		3		

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (untabulated).

ARGENTINA—*Rosario.*—Month of November, 1911. Population, 208,123. Total number of deaths from all causes 359, including diphtheria 3, smallpox 6, tuberculosis 46, typhoid fever, 1.

AUSTRIA-HUNGARY—*Brunn.*—Month of November, 1911. Population, 108,944. Total number of deaths from all causes 185, including diphtheria 7, measles 1, tuberculosis 31, typhoid fever 1.

BRITISH INDIA.—*Rangoon.*—Month of November, 1911. Population, 289,432. Total number of deaths from all causes 764, including cholera 4, measles 1, plague 12, smallpox 3, tuberculosis 37, typhoid fever 3.

CANADA—*Ontario.*—Month of December, 1911. Population, 82,000. Total number of deaths from all causes 103, including diphtheria 2, scarlet fever 1, tuberculosis 5.

DUTCH GUIANA—*Paramaribo.*—Month of December, 1911. Population, 37,475. Total number of deaths from all causes 107. No contagious diseases.

FRANCE—*Calais.*—Month of December, 1911. Population, 75,000. Total number of deaths from all causes 100, including diphtheria 1, measles 1, tuberculosis 20.

Marseille.—Month of December, 1911. Population, 550,619. Total number of deaths from all causes 791, including diphtheria 5, tuberculosis 125, typhoid fever 14.

GREAT BRITAIN.—Week ended January 6, 1912.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 15.3 per 1,000 of the population which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 18.6 per 1,000 of the population which is estimated at 1,157,014. The lowest rate was recorded at Drogheda, viz, 4.2, and the highest at Ballymena, viz, 27.5 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 17.4 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Patrick, viz, 8.4, and the highest at Greenock, viz, 24.7 per 1,000. The total number of deaths from all causes was 705, including diphtheria 13, measles 34, scarlet fever 11, typhoid fever 2.

ITALY—*Milan.*—Month of October, 1911. Population, 602,236. Total deaths from all causes, 162; including diphtheria 3, measles 1, tuberculosis 118, typhoid fever 34.

Month of November, 1911. Total number of deaths from all causes, 140; including diphtheria 4, measles 3, scarlet fever 1, tuberculosis 106, typhoid fever, 23.

Month of December, 1911. Total number of deaths from all causes, 151; including diphtheria 5, scarlet fever 1, tuberculosis 119, typhoid fever 26.

SPAIN—*Cadiz.*—Month of December, 1911. Population, 67,306. Total number of deaths from all causes, 160; including diphtheria 2, smallpox 9, tuberculosis 19.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

VOL. XXVII. FEBRUARY 16, 1912. No. 7

INVESTIGATION OF TYPHOID FEVER AT TEXARKANA, ARK.-TEX. (MILK OUTBREAK.)

By J. R. Ridlon, Assistant Surgeon, Public Health and Marine-Hospital Service.

This investigation was undertaken upon the request of the representative to Congress from the first district of Texas, to the Surgeon General, Public Health and Marine-Hospital Service, and with the approval of the State boards of health of Arkansas and Texas.

Occasion is taken to express appreciation for the help and courtesies extended by the mayors, health officers, and other city officials, and by the physicians and citizens of the two cities.

SCOPE OF INVESTIGATION.

This has included a careful study of 36 cases, a sanitary survey of the cities, inspection of dairies, inspection of the public water system, bacteriological examination of water and milk; the making of Widal blood tests as an aid in diagnosis; and the examination of blood and stools from the attendants of one dairy. A blank form was used for each patient and filled out with any information having a bearing upon the possible source of infection.

POSSIBLE CAUSES.

The prevalence of typhoid fever in any community depends directly upon the chances which are offered for the contamination of food and drink with the typhoid bacillus.

The typhoid bacilli are discharged in the excreta of patients with typhoid fever during a part of the incubation period, during the period of fever and convalescence, and occasionally for years after the attack. In a small percentage of cases typhoid bacilli are found in the excreta of people who have had no apparent symptoms of the disease.

Infection may be brought into a community by means of water, milk, milk products, ice, green vegetables, raw shellfish, and other food products.

Its further spread in the community may be by direct contact to persons in intimate association with the patient, and by insects, especially flies having access to the dejecta of patients and to the food of those living in the same or neighboring houses.

Milk is a favorable culture medium for the typhoid bacillus, and when once introduced it multiplies rapidly under ordinary conditions.

There are numerous ways in which it may gain entrance in milk. At the dairy farm a person in the early stages of typhoid fever or convalescing, or suffering from an unrecognized case of the disease, may convey infection directly to the milk in handling it. Or a person nursing a patient may convey the infection to the milk. Again, infection may be carried by flies from excreta not disinfected, directly to the milk or the milk utensils. If the milk utensils are washed in water taken from a well or stream, which is contaminated by infected dejecta, the disease is thus further spread.

Milk bottles left at the home of a patient with typhoid fever may easily become infected, and if carried back to the dairy and filled before being thoroughly sterilized, may carry the infection to a different home.

The essential aim in all preventive measures against typhoid is the keeping of the dejecta of typhoid patients from the food and drink of other people. This can be accomplished in recognized cases, but a few mild cases and either temporary or chronic bacillus carriers are more than apt to escape detection.

PREVALENCE OF DISEASE.

From September 1 to November 15, 1911, there occurred in Texarkana 36 cases of typhoid fever. These cases were reported by the attending physicians at the special request of the health officers, as typhoid at present is not among the list of infectious diseases required to be reported.

Two of these cases are regarded as being imported, the disease developing within 9 days after their arrival in the city.

The remaining 34 were distributed as follows, according to the date of definite onset:

From Sept. 1-15, inclusive	2
From Sept. 16-30, inclusive	1
From Oct. 1-15, inclusive	3
From Oct. 16-31, inclusive	9
From Nov. 1-15, inclusive	19
	34

Estimating the population at 15,000 people, this gives an incidence of disease of 1 case to every 441 people.

There is no data for an accurate comparison of the number of cases occurring this year with previous years. But it would seem that there has been an unusual prevalence of the disease, at least during the period from October 15 to November 15.

The cases occurred for the most part in the better residential part of the city. Twenty-eight of the cases occurred in 28 separate homes. The remaining 6 occurred in 3 separate homes, 2 in each. In 2 of these homes both patients were taken sick within a week of each other, which suggests some common outside source of infection. In the third home the second case developed 15 days after the first case, which suggests contact with the previous case as the cause.

In general they were of mild or moderate severity, and only 1 death was reported. This gives a case fatality of 2.9 per 100, which is very low. For the most part the cases were characterized by a sudden onset.

DIAGNOSIS.

As an aid in diagnosis, 8 Widal blood tests were made, of which 5 were positive for typhoid and 3 negative. Of the 3 negative ones, 2 were not clinically typhoid, and the third was made during the first week of sickness.

Of the 5 positive ones, 2 were of a mild type, and a third had not been confined to bed at all.

In the 34 cases it is extremely improbable that any mistake in diagnosis was made; but on the other hand it is very probable that there really were more cases of typhoid or paratyphoid which were not classed as such on account of their mildness.

ANALYSIS OF CASES.

The 34 cases were distributed according to age as follows:

0–4 years, inclusive	3
5–9 years, inclusive	10
10–14 years, inclusive	9
15–19 years, inclusive	5
20–24 years, inclusive	2
25–29 years, inclusive	2
30–34 years, inclusive	1
35–39 years, inclusive	2
	34

Twenty-two, or 61 per cent, of the 34 cases were under 15 years of age. This is a high percentage and very suggestive of milk infection.

SEX.

The cases were evenly divided as to sex, 17 occurring in males and 17 in females.

CONTACT.

One case occurred in the same house as a previous case, the onset being 15 days later. This case may have been due to infection by contact.

SANITARY CONDITIONS.

In 29 of the 34 cases the house was connected with the city sewerage system and in 5 an open privy was in use. In only 2 cases could the sanitary conditions be classed as extremely bad.

DISPOSAL OF EXCRETA.

The disinfection of excreta was as follows: Efficient in 21 cases, fairly efficient in 10 cases, not efficient in 3 cases.

MILK.

Of the 34 cases, 33 gave a history of using milk as a beverage, or on cereals, or in both ways, within 30 days before the onset of sickness. One patient claimed to have used no milk at all.

Of the 33 cases using milk, 25, or 75 per cent, obtained the whole or a part of the milk from one dairy farm. Of the remaining 8 cases, 7 used milk from a second dairy and 1 from his own cows. Of these 7 cases, 3 took part of their meals at various restaurants, and while known to have used milk from the second dairy, may possibly have had some from the first also.

In 1 other of the 7 cases infection was most probably acquired by contact.

When divided into 15-day periods, we have the following:

	Number cases using milk.	Number cases using milk from dairy No. 1.
Sept. 1-15, inclusive	2	1
Sept. 16-30, inclusive	1	1
Oct. 1-15, inclusive	3	0
Oct. 16-31, inclusive	8	6
Nov. 1-15, inclusive	19	17
	33	25

Comparisons between different dairies, to be of value, must of necessity take into account the amount of milk sold in proportion to the number of cases of sickness.

From information furnished by the dairymen, it is reckoned that the daily output of milk furnished by the 10 dairies is 1,800 quarts, and for the period of 76 days from September 1, to November 15, would be 136,800 quarts.

Taking this figure as a basis, and computing the amount of milk sold by each dairy, and the number of cases of typhoid for each 100,000 quarts of milk sold, a very good idea is gained of the distribution of cases among the different dairies.

No. of dairy.	Number of cases.	Number quarts milk sold in 76 days.	Ratio of cases per 100,000 quarts of milk.
1	25	18,240	137
2	7	53,200	13
3	0	21,280	0
4	0	4,560	0
5	0	4,560	0
6	0	7,600	0
7	0	9,220	0
8	0	7,600	0
9	0	4,560	0
10	0	6,080	0

Of these 7 cases attributed to dairy No. 2 for the purpose of illustration, as already mentioned, one was probably due to infection by contact, and from the evidence obtained it would not be fair to attribute any of them to infection caused by using this milk.

On the other hand, the 25 cases credited to dairy No. 1 had no other common source of supply for either food or drink, and their infection may be justly attributed to this milk.

It is evident that the number of cases occurring among the customers of dairy No. 1 is out of all proportion to the amount of milk sold. This dairy sold 60 gallons of milk daily, or 13 per cent of the total, and had among its customers 75 per cent of all those patients giving a history of using milk. It would be impossible to explain this upon the ground of mere coincidence.

Further evidence in regard to the milk from dairy No. 1 as being the source of infection is brought out by a comparison between the number of cases occurring among users of this milk and the number of cases occurring among the remainder of the population during the period from October 16 to November 15.

During this period, 27 cases occurred; 23 of these cases were among customers of dairy No. 1, and 4 were not.

Allowing the liberal estimate that each quart of milk of the daily 240 quarts supplied by this dairy was divided among 8 people, we have 23 cases among 1,920 people, or 1 case to every 83, as against 4 cases among 13,000 people (the remainder of the population), or 1 to every 3,250.

Some of the general features of milk-borne typhoid epidemics, as observed in various places by different investigators, are described as follows: There is a special incidence of disease upon the track of the suspected milk supply; better class houses suffer most; milk drinkers are chiefly affected; women and children suffer most; there is a sudden onset, with short incubation period; several cases may occur in the same house about the same time; the attacks are often mild; contact cases are lessened, and the mortality rate is lower than usual.

It would seem that these general features have been quite closely followed out in the series of cases here.

A careful inspection of the suspected dairy was made and measures were recommended for the proper handling of the milk. There was no history of any case of typhoid fever occurring on the place, and no history of any person on the place being associated with a typhoid patient.

To detect a possible bacillus carrier, a Widal test was made of 4 persons on the farm who were employed in handling the milk or utensils. These were all negative for typhoid or paratyphoid. An examination of the stools of 3 people engaged in handling the milk was made, which were also negative for the *Bacillus typhosus*.

Water used for washing the milk bottles and utensils was taken from an open well near the milk house. The water from this well was found to be badly contaminated, the colon bacillus being found in 0.1 of a cubic centimeter at two examinations. Within 4 or 5 feet of this well there ran an underground pipe carrying the discharge from a bathtub in the house, and waste water used in washing the milk utensils.

Again, the method of washing and sterilizing dirty milk bottles was not sufficient to kill the typhoid bacillus, had any been present. It is very possible that dirty bottles returned from the home of a typhoid patient may have been contaminated, and these being washed in the same water with other bottles, and all being filled again without thorough sterilizing, may have served to spread the infection.

Also this contaminated waste water may have found its way into the well from the drain pipe, and the infection further spread from this source.

Whatever the exact source of the infection, it apparently ceased to be operative before or about November 1, for the date of definite onset of the last case of typhoid fever reported was November 12.

No typhoid bacilli were found in the well water or milk, but this is very natural, as the first examination was made about 20 days after the date of onset of the last case of typhoid reported, and about a month from the time we may judge the source of infection to have disappeared.

ICE CREAM.

The occasional use of ice cream was quite general among the 34 cases, the cream being obtained from various sources. No case could be definitely attributed to its use, but there is possibility that this was the source of infection in a few cases not otherwise accounted for.

ICE.

The use of ice can be quite definitely eliminated as a cause of infection, since this product is satisfactorily made from distilled water.

WATER.

The public water supply is obtained from two groups of wells numbering about 46, and from about 30 to 70 feet deep. That portion coming from the Arkansas station is subjected to mechanical filtration, and at this station a reserve supply is kept in a storage reservoir for fire purposes. The daily consumption is about 850,000 to 1,000,000 gallons. This supply is used quite generally in the city as the sole or occasional supply. Besides this, many families have shallow wells, either dug or driven to a depth between 20 to 40 feet.

Among the 34 cases investigated the water supply was as follows:

City water:	
Solely	18
Principally	3
Occasionally	11
Shallow-well water:	
Solely	1
Principally	11
Occasionally	1
Spring water:	
Solely	1
Principally	0
Occasionally	2

In order to judge what part, if any, water has played as a cause of typhoid, 22 bacteriological examinations have been made of samples of the city water and 7 from private sources. Five of these 22 samples were taken at the pumping stations and 17 from centrally located taps.

Fermentation tests were made in lactose bouillon incubated at room temperature for 48 hours. Plates of standard agar, kept at room temperature for 48 hours, were used in making the counts. Endo's plating medium was used for the detection of the colon bacillus from fermentation tubes showing the presence of gas. From these plates typical red colonies of *Bacillus coli* were fished and later fully identified at the Hygienic Laboratory.

Numerous fermentation tubes showed the presence of a small amount of gas, but when plated on Endo's medium no colon-like colonies were found. Many of these colonies which were formed on Endo's medium were later replanted in fermentation tubes but in no instance was gas formed.

This leads to the conclusion that the formation of gas in the original tubes was due to anaerobic bacteria which failed to grow on the plates. On the other hand in 3 instances the colon bacillus was found on plates made from fermentation tubes showing the presence of only a small amount of gas, estimated at less than 10 per cent. This emphasizes the necessity of careful plating out from fermentation tubes showing the presence of only a small amount of gas, to detect the colon bacillus, and shows the error that may arise when relying only upon the presumptive test.

Results of examination of water supply.

Source and date.	Number of bacteria per cc.	Fermentation in lactose bouillon.			B. coli in—		
		10 cc.	1 cc.	0.1 cc.	10 cc.	1 cc.	0.1 cc.
Texas station, before passing pump:							
Dec. 4, 1911	200	......	......	......	......	......	......
Dec. 16, 1911	350	......	......	[1]×	......	......	......
Average	275	......	......	......	......	......	......
Texas station, after passing pump, Dec. 4, 1911	225	......	......	......	......	......	......
Arkansas station, after passing pump:							
Dec. 4, 1911	1,500	......	......	......	......	......	......
Dec. 16, 1911	800	[1]×	[1]×	......	......	......	......
Average	1,150	......	......	......	......	......	......
Central tap on State Line Avenue:							
Dec. 4, 1911	500	......	......	......	......	......	......
Dec. 9, 1911	585	[2]×	[1]×	......	......	......	......
Dec. 11, 1911	295	×	×	......	×	×	......
Dec. 12, 1911	2,100	×	×	......	×	×	......
Dec. 16, 1911	545	[1]×	[1]×	[2]×	......	......	......
Average	805	......	......	......	......	......	......
Central tap on Pine Street:							
Dec. 9, 1911	215	×	[1]×	[1]×	×	......	......
Dec. 11, 1911	600	×	×	×	×	×	×
Dec. 12, 1911	2,385	[2]×	[1]×	......	......	......	......
Dec. 13, 1911	1,300	[1]×	[2]×	......	......	......	......
Dec. 15, 1911	130	×	[2]×	......	×	......	......
Dec. 16, 1911	230	×	[2]×	[2]×	×	......	......
Average	810	......	......	......	......	......	......
Tap corner Broad and Pine Streets:							
Dec. 9, 1911	2,185	[2]×	[2]×	[1]×	......	......	......
Dec. 11, 1911	280	[1]×	[2]×	[2]×	......	......	......
Dec. 12, 1911	1,450	×	[2]×	......	×	......	......
Dec. 13, 1911	3,300	×	[2]×	[1]×	×	......	......
Dec. 15, 1911	660	[1]×	[2]×	......	......	......	......
Dec. 16, 1911	765	[1]×	[2]×	[2]×	......	......	......
Average	1,440	......	......	......	......	......	......
Water samples, miscellaneous:							
Well open B—							
Dec. 2	1,933	×	×	×	×	×	×
Dec. 5	1,066	×	×	×	×	×	×
Well closed B, Dec. 5	366	[2]×	[1]×	......	......	......	......
Well closed C, Dec. 6	300	[1]×	......	......	......	......	......
Well open W, Dec. 9	416	×	[1]×	......	......	......	......
Spring B, Dec. 8	1,110	×	×	......	×	×	......
Spring G, Dec. 18	833	×	×	......	×	×	......

[1] ×—Small amount of gas. Plated on Endo's medium. No colonlike colonies formed.
[2] ×—Gas bubble. Not plated.
×—Present,

From the above tables it is seen that the colon bacillus was found in 8 of these samples of city water, or 36 per cent, but for the most part in such large amounts of water (10 c. c.) as not to indicate a very dangerous pollution. Water showing only this degree of pollution could not be considered as the probable cause of a typhoid epidemic.

During the time covered by these examinations the filter was under repair, and the quality of the water may be fairly assumed not to have been up to the usual standard, or equal to that supplied during the month of October and before the unusual prevalence of this disease.

To fairly estimate the quality of the water, it is necessary to take into account the source of the water in connection with the bacteriological examination. Water coming from closed wells at a depth of 30 feet or more should be practically free from contamination with intestinal bacteria unless under very unfavorable surroundings.

Before a water supply can be considered as the prime factor in the causation of a typhoid epidemic it is first necessary to eliminate other possible factors as causes, which can not be done in this case with the milk supply. Thus the assertion is warranted that evidence is lacking that the public water supply has played any appreciable part in the causation of typhoid.

No case could be definitely attributed to the use of water from shallow wells, but this remains the possible source of infection in a few cases not otherwise accounted for. From the few examinations made it would seem that the water obtained from the shallow wells, especially of the open type, was of an inferior quality to that of the public supply.

SUMMARY AND CONCLUSIONS.

To sum up the foregoing, 25 of the 34 cases arising in the city or 73.5 per cent, are attributed to the use of milk from one dairy; one case may be attributed to contact, leaving 8 cases, or 23.5 per cent unaccounted for. The most probable source in these cases is milk, ice cream, or well water.

RECOMMENDATIONS.

Milk and food supplies.—The sale of milk and ice cream should be under the supervision of the city authorities. Those desiring to sell milk and ice cream should be required to take out a license and be subject to inspection. All infectious diseases at the dairy farm should be reported, and the sale of milk should be prohibited when coming from insanitary premises or from places where there are patients suffering from typhoid or other infectious disease if there is the least possibility of contamination.

This requires the attention of a milk inspector whose duty it should be to make inspections of the dairies and instruct the dairymen as to the proper way to secure clean milk.

Pasteurization of milk is urged as the most efficient means of preventing the spread of typhoid from this source. If done in an efficient manner it will kill the germs which may get into the milk from undetected sources.

The practice of keeping foodstuffs exposed for sale, where subject to contamination by flies and street dust, should be prohibited.

Sewerage.—The city sewerage system should be extended as soon as possible, to include those portions of the city not already supplied, and, when available, connections to the sewer should be enforced.

Where sewerage connection is not possible, soil pollution should be limited by replacing the common open privy with one of a sanitary type, so constructed that flies can have no access to it, and its contents can be properly disinfected and disposed of.

Disposal of stable and household refuse.—To limit the prevalence of flies and the spread of disease by this means, careful attention should be given to the removal of their breeding places, which are chiefly in stable and household refuse. The disposal of this refuse should be under the control of city authorities, and frequent removal, at least once a week, is suggested as the most practicable method.

The health department in its relation to typhoid.—Probably the most important factor in the prevention of typhoid fever and other infectious diseases is the vigilance of the health department. The importance of the health department in the welfare of the city should be fully appreciated and adequate provision made for it in the way of equipment.

Typhoid fever should be reported to the health officers as other infectious diseases are, so that they can make investigation as to the cause of the disease and the measures necessary for its control. Instructions should be given as to the proper disinfection of excreta, and where necessary the disinfectant should be distributed free of charge.

Included in the health organization there should be a bacteriologist, with the equipment necessary to make examinations of milk, water, and blood. Blood examinations are most important in the early diagnosis of typhoid fever, especially so in a country where malaria occurs. By this means, also, more accurate information is secured as to the prevalence of the disease and its control made more efficient.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BROOKLINE, MASS.

MILK—PRODUCTION, CARE, AND SALE.

ARTICLE V. *Milk.*—SEC. 1. All animals kept in the town of Brookline for the production of milk shall, at all times, be kept in a clean condition; the udders shall be washed or wiped with a clean, damp cloth before milking; the milker's hands shall be clean, and the animals shall not be fed upon swill or fermented brewery grains.

SEC. 2. Any person having any infectious disease (the board considers tuberculosis to come within the meaning of the statutes in regard to infectious diseases), or having recently been in contact with any such person, shall not be allowed to milk cows or handle cans, measures, or other vessels used for milk intended for sale, or in any way take part or assist in the sale of the same, until the board of health is satisfied that all danger of communicating such disease is passed.

SEC. 3. Milk cans or jars of milk dealers shall not be left at any house in which there is a case of diphtheria, scarlet fever, typhoid fever, or smallpox, but the milk shall be poured into receptacles furnished by the customer.

SEC. 4. No person, by himself or by his servant or agent, or as the servant or agent of any other person, firm, or corporation, shall in the town of Brookline sell, exchange, or deliver, or have in his custody or possession with intent to sell, exchange, or deliver, any milk, skimmed milk, or cream which contains more than 300,000 bacteria per cubic centimeter, or which has a temperature higher than 50° F.

SEC. 5. All milk sold in the town of Brookline other than from wagons shall be delivered to the purchaser in original sealed jars, or from a milk cooler which has been approved by the board of health.

SEC. 6. All premises, vehicles, compartments, or rooms used for the storage and sale of milk in the town of Brookline shall be kept cleansed in a manner satisfactory to the board of health.

SEC. 7. No person by himself or by his servant or agent, or as the servant or agent of any other person, firm, or corporation, shall in the town of Brookline sell, exchange, or deliver milk, skimmed milk, or cream produced upon premises where there is a case of contagious disease without the written consent of the board of health.

SEC. 8. All utensils used in the handling and selling of milk shall be washed and sterilized with steam or boiling water each day before being used, and all milk vessels (bottles and cans) which are to be returned, shall be cleansed as soon as emptied by the person who pours out the milk.

SEC. 9. Premises, compartments, rooms, receptacles, or ice chests used for the storage or sale of milk shall be kept cleansed in a manner satisfactory to the board of health. [Ordinance, board of health, adopted Nov. 6, 1911.]

PIQUA, OHIO.

MILK—PRODUCTION, CARE, AND SALE.

Permits.—No one shall engage in the sale of milk or cream in the city of Piqua, Ohio, ship the same into the city for sale, or supply to others for use in the city, unless he shall first obtain a permit from the board of health so to do.

A fee of 50 cents will be charged for each permit, and the same shall be credited to the sanitary fund. Permits shall be renewed every six months.

On or before the 1st day of January and the 1st day of July of each year hereafter, permits will be issued by the board of health for the ensuing half year, to all applicants who comply with the provisions of these rules and regulations, regulating the sale of milk or cream in the city of Piqua, but before the issuance of any permit every vendor or shipper of milk or cream shall make application therefor upon a printed form provided by the board for the purpose, on which shall be stated:

1. The name, residence, postoffice address, and location of the business place or places of the applicant.
2. The number of cows from which milk is obtained for sale, and the kind of food which the cows are given.
3. If the applicant buys part or all his milk supply, the names and addresses of all persons from whom he obtains milk or cream.
4. If the applicant be a shipper of milk or cream into the city he shall, in addition to the above, state the route of his shipments.

If any person engage in the sale of milk or cream after the said 1st day of January or July in any year, he shall forthwith make application for a permit for the remainder of the half year, complying with the above regulations.

The board will not issue any permit unless it is satisfied, after inspection, with the cleanly and sanitary condition of the stables, cows, wagons, store, or place of business of the applicant therefor, and with all the utensils used by him from which his milk or cream is obtained; and that the food given the cows is pure and wholesome, and that all persons engaged in the care and handling of the milk are free from any contagious diseases, and that said persons use due cleanliness in their work.

All applications for permits shall be signed by the applicant, and when received by the milk and dairy inspector shall be placed on file and the name of such applicant shall be entered in a book of registration kept for such purpose. The filing of such application shall authorize such applicant to continue the prosecution of his business until the board of health takes official action thereon, and either issues a permit to such applicant for the sale of milk or cream or refuses to do so. The permit fee shall accompany the application.

As soon as possible after an application is received at the health office for a permit to sell milk, the milk and dairy inspector shall visit the dairy or place of business of such applicant and make such observation and gather such information as will enable the board to properly consider such application.

If, after issuing a permit to sell milk or cream, the board of health shall become satisfied that the provisions of this subdivision of the sanitary code are being violated, it will at once revoke the permit issued to such person or persons, and no new permit will be issued until all insanitary conditions have been rectified, and all other provisions of this subdivision of the sanitary code are complied with.

Quality of milk.—No person shall bring into the city for sale, or shall sell or offer for sale any milk—

a. Containing more than 88 per cent of water or fluids.
b. Containing less than 12 per cent of milk solids.
c. Containing less than 3 per cent of milk fats.
d. From which any part of the cream has been removed.
e. Having a specific gravity of less than 1.029.
f. Containing any dirt, foreign matter, or sediment.
g. Containing any boracic or salicylic acid, formaldehyde, or other foreign chemicals.
h. Containing any pathogenic bacteria.
i. Containing bacteria of any kind, more than 500,000 per cubic centimeter.
j. Drawn from any cow having a communicable disease or showing clinical symptoms of tuberculosis, or from a herd which contains any diseased cattle or are afflicted with or exposed to any communicable disease.
k. Drawn from any cow which has been fed on garbage, refuse, swill, moist distillery waste, or other improper food.
l. Which has existed or has been kept under conditions contrary to the provisions of this code.
m. No milk shall be kept, sold, offered for sale, or drawn from cows suffering with sore and inflamed udders and teats, or from cows diseased.
n. Drawn from any cow within fifteen days before or twelve days after parturition.
o. No milk in partially filled bottles shall be sold or offered for sale, and no bottles shall be filled, capped, or recapped outside of the dairy building regularly used for this purpose.

Provided that the subdivisions a, b, c, and d shall not apply to milk sold under the title of "skimmed milk."

Retailers.—All grocers, bakers, or other persons having or offering for sale milk or cream shall at all times keep the names and addresses of the dairymen from whom the milk on sale was obtained posted up in a conspicuous place wherever such milk may be sold or offered for sale. If skimmed milk is kept or offered for sale, each and every container of such milk shall be plainly marked with the words "skimmed milk."

No person shall bring into the city for sale or sell or offer for sale milk from which the cream has been removed, either in part or in whole, unless plainly marked on the container "skimmed milk."

Milk tickets.—If dairymen or other persons offering milk for sale use tickets as representatives of value, these tickets must be in coupon form and must be destroyed after once using.

The stable and surroundings.—The stable shall be so constructed that the cows have plenty of air space and light, and should be painted in some light color or whitewashed twice a year.

The stables must be kept free from dirt, dust, cobwebs, and odor.

The urine and manure shall be twice daily removed from the stable, and must be moved at least 30 feet from the stable and placed where cows can not get into it. Manure must not be thrown out of stable windows. The bedding shall be kept sweet and clean; the food and water ample and well chosen. No dairyman shall feed his cows on swill, garbage, or other like substances. If malt is used, it must not be fed when sour. The surroundings to the stable must be kept in a sanitary condition. Cows must not be allowed to stand in manure and filth. Cows must be kept clean. Manure, litter, etc., must not be allowed to become caked or dried on them.

The milkers.—The milkers must thoroughly wash and wipe their hands and the cows' udders before they begin milking. Their outer garments must be clean. They must not use pails, cans, strainers, etc., unless they have been thoroughly washed in hot water and soap, or hot water and soda, and afterwards sterilized with boiling water or steam, Care must be taken that the seams of the vessels are thoroughly cleaned with a brush. They must refrain from milking or handling milk in any way when in themselves or their families there is even a suspicion of any contagious or infectious disease, such as smallpox, scarlet fever, diphtheria, typhoid fever, tuberculosis, or the like.

Handling the milk.—Immediately after milking the milk shall be removed from the stable into a milk room screened from flies and other insects, aerated and cooled to at least 60° temperature, and put into perfectly clean bottles or cans. The milk house or milk room must be located at least 20 feet from any other building. Dairymen who use both bottles and cans in delivering milk shall not fill bottles while on their delivery route. All milk and cream sold in the city shall be delivered with a temperature not to exceed 65° F.

Care of cans or bottles.—All cans or bottles used in the distribution of milk must be thoroughly cleaned, either by hot water and soap or hot water and soda, or other alkalies, rinsed and sterilized by boiling water or steam before they are again used as receptacles for milk. Extreme care must be exercised in cleaning the faucets to cans by use of a brush. No person shall use a milk bottle for other than milk purposes.

Contagious diseases.—Should scarlet fever, smallpox, diphtheria, typhoid fever, tuberculosis, or other dangerous or infectious diseases occur in the family of any dairyman or among any of his employees, or in any house in which milk is kept for sale, or in the family or among the employees of any person who ships milk into the city for sale, such dairyman, venders, or shippers of milk shall immediately notify the health officer of the facts of the case, and the health officer shall at once investigate and order the sale of such milk stopped, or sold under such regulations as he thinks proper.

Should dairymen, venders, or shippers of milk fail to notify the health officer when contagious diseases exist in their families or in the families of their employees, or who, after such information is given the health officer, fail to obey his directions, the milk and dairy inspector shall sieze and destroy all milk sent into the city by such persons, and he shall, when acting in good faith, be held harmless in damages therefor in any suit or demands made.

In delivering milk to families in which there exists any of the above-named contagious or infectious diseases, the dairyman shall not enter, neither shall he permit any of his milk bottles or vessels to be taken into such houses, but shall pour such milk as each family wishes into vessels furnished by such family.

Adulterations.—No person shall offer for sale any milk that is impure, adulterated, or unwholesome.

Milk delivery wagons.—No one shall use any vehicle for the delivery of milk in the city of Piqua which has not painted thereon in legible roman letters not less than 3 inches in height, and on both sides of the vehicle in a conspicuous place, the name and location of his dairy and the number of his permit, and if such vender sells skimmed milk, each and every container of skimmed milk shall have the words "Skimmed milk" thereon in plain letters not less than 1 inch in height.

The milk delivery wagons shall be kept at all times in a cleanly condition and free from any substance liable to contaminate or injure the purity of the milk.

Certificate of veterinarian.—The board may require a certificate from a licensed veterinarian, showing the cows furnishing milk brought for sale within its jurisdiction are free from tuberculosis or other dangerous disease.

Milk inspectors.—The milk or dairy inspector, the health officer, or any other person authorized by the board of health may examine all dairy herds, utensils for handling milk of all dairymen or other persons engaged in selling or shipping for sale milk or cream to the city of Piqua. These inspectors shall have power to open any can, vessel, or package containing milk or cream, whether sealed (locked) or otherwise, or whether in transit or otherwise, and take samples of the milk or cream for testing or analysis; and if, upon inspection, the milk or cream is found to be filthy, or the cans or other containers are in an unclean condition, the said inspector may then and there condemn the milk or cream as deemed by him to be filthy and pour the contents of such bottles, vessels, or packages upon the ground forthwith, and he shall, if done in good faith, be held harmless in damages therefor in any suit or demand made.

Penalty for violation.—Whoever violates any provision of this subdivision of the sanitary code of the city of Piqua shall be fined in any sum not exceeding $100, or imprisoned for any time not exceeding 90 days, or both; but no person shall be imprisoned under this section for the first offense, and the prosecution shall always be and for such first offense, unless the affidavit upon which the prosecution is instituted contains the allegation that the offense is a second or repeated offense. (Sec. 2119, O. L., V. 85, p. 424.)

[Regulations, board of health, adopted July 31, 1911.]

PLAINFIELD, N. J.

NUISANCES—GARBAGE, REFUSE, MANURE, STAGNANT WATER, CESSPOOLS, PRIVIES, BODIES OF DEAD ANIMALS, RAGS, BONES, SCRAPS, KEEPING OF ANIMALS, OFFENSIVE TRADES, CARE OF PREMISES, OVERCROWDING OF BUILDINGS, CLEANING AND FUMIGATION OF RAILWAY CARS.

SECTION. 1. Whatever is dangerous to human life or to health and whatever renders the ground, air, food, or water unwholesome and an injury to human health is hereby declared to be a nuisance and is prohibited.

SEC. 2. The casting, draining, throwing or discharging, or causing to be cast, drained, thrown, or discharged into any public street or highway, gutter, alley, or other public or private grounds within said city, any slops, kitchen water, laundry water, sewage, waste water, swill, or filth, shall be deemed and hereby is declared to be a nuisance; and all ponds, pools, or collections of still and stagnant water, all heaps and quantities of manure (stable manure used as a fertilizer or kept in manure pit built as hereinafter directed excepted) or filth of any kind, all cow yards and hog pens, any accumulation or deposit of offal or of decaying animal or vegetable matter, in or upon any lot of land near any inhabited dwelling house or any public street or highway, alley, or other public or private place within said city is declared to be a nuisance.

SEC. 3. Other nuisances within the city are hereby defined and declared to be, and they shall include and embrace: Placing or depositing in or upon any street or alley, or in or upon any public or private property, any dead animal not killed for consumption as food, or any part of same, or filth from privies or cesspools or catch basins, or garbage; also any foul or offensive or noxious matter or substance whatever; also throwing or allowing to drop into any sewer, receiving basin, or in or upon the bed of Green Brook or of Cedar Brook, any dead animal or decomposing animal or vegetable matter whatever; also any full or overflowing privy vault, cesspool, or other receptacle for filth; also permitting any liquid or solid matter taken from cesspools or privy vaults to be deposited in or upon any lawn, lot, or place within the city; also allowing any night soil, garbage, swill, or other offensive or decomposing solid or fluid matter or substance to leak or ooze from cart or wagon or vessel in which the same may be conveyed or carried; also the conveying or carrying through any street of any substance which has been removed from any privy vault or cesspool, unless the same shall be inclosed in air-tight barrels or tanks.

SEC. 4. No rags, bones, scraps, or refuse matter shall be brought into or be stored or kept within the limits of the city of Plainfield, except on permit of this board, said board to reserve the right of revocation at any and all times.

SEC. 5. No dwelling or any part thereof, within the city of Plainfield, shall be used for the sale, storage, sorting, or handling of rags, without a written perm of health.

Sec. 6. The construction, maintenance, use, or continuance of any privy vault or other receptacle for human excrement in or upon the ground in such manner that the filthy contents thereof shall be accessible to flies shall constitute and is hereby declared a nuisance, and the construction, maintenance, use, or continuance thereof is hereby prohibited.

Sec. 7. No person shall have or keep upon any premises or in any building, lot, or place within the city any swine without the permission of the board of health, and the pens and places in which any swine may be permitted by the board of health to be kept shall at all times be kept clean and in such condition as to be free from any noxious or unhealthful odors.

Sec. 8. No person shall keep or allow to be kept in any dwelling house or any part thereof any horse, cattle, swine, goats, or fowls, nor shall any such animals or fowls be allowed to run at large in the city.

Sec. 9. No animal or vegetable substance, or swill or garbage, street sweepings or muck, or dirt gathered in cleaning yards, buildings, sewers, waste of mills and factories, or any offensive material, either separately or mixed with ashes or rubbish, shall be deposited on or used to fill in or raise the surface or level of any ground, lot, or street nor shall any person maintain any sunken land from which there shall arise offensive gases deleterious to health.

Sec. 10. No person or persons shall carry on any trade or business within the city in such a manner as to be obnoxious and offensive to the inhabitants of the city of Plainfield or any part thereof or which may be attended by noisome or unhealthful odors, or which may be attended by such noise or noises as may be detrimental to life or health.

Sec. 11. No person owning, occupying, or having charge of any house, stable, or other buildings or premises, shall keep or allow therein or thereon any dog or other animal which shall by noise disturb the quiet and repose of any person therein or in the vicinity to the detriment of life or health.

Sec. 12. Any imperfect trap, sink, or water-closet within any house, or any other drainage appliance or fixture within any house, from which there shall arise any foul or noxious gas or odor detrimental to human health, is hereby declared to be a nuisance.

Sec. 13. The keeping of any house or building or part thereof in such a state of uncleanliness, or the crowding of persons in any house or building in such a manner as to endanger the health of the persons dwelling therein, is hereby declared to be a nuisance and is prohibited.

Sec. 14. No owner, agent, or lessee of any building or any part thereof shall occupy nor let, lease, or hire out the same or any portion thereof, to be occupied either for domestic or business purposes by any person, or allow the same to be occupied as a place for anyone to dwell or lodge or conduct business, where such building or parts thereof are not provided with adequate means of ingress and egress, or not sufficiently supported, lighted, ventilated, drained, cleaned, or provided with proper water-closets.

Sec. 15. No building or premises shall be rented, let, leased, or occupied, either for domestic or business purposes, which shall not have a plentiful supply of pure water suitable for domestic purposes furnished at one or more places in such building or yard thereof, so that the same may be adequate and reasonably convenient for the use of the occupants of said building or premises.

Sec. 16. Whenever it shall be decided by this board that any building or part thereof is unfit for human habitation by reason of the number of occupants, want of cleanliness or by reason of its being in a condition dangerous to health or life or likely to be the cause of sickness among the occupants, and notice of such decision shall have been affixed conspicuously on the building or any part thereof, and personally served upon the owner, agent, or lessee, if the same can be found in the State, requiring all persons therein to vacate such building or part thereof for the reasons stated therein, such buildings or part thereof shall within ten days thereafter be vacated, or in case of special emergency, within such shorter time as may be specified in said notice.

Sec. 17. It shall be the duty of all owners, lessees, tenants, or occupants of any and all buildings in the city of Plainfield to keep the gutters and sidewalks and alleys surrounding said buildings free from any offensive substance, liquid or solid, or any dirt, rubbish, water, bottles, broken glass, crockery ware, iron, tin, wire, or stones, or any other thing dangerous to health, life or limb of man or beast.

Sec. 18. Each and every railway car running through or upon the streets of, or elsewhere in the city of Plainfield, and engaged in carrying passengers in said city, or to other places, shall be kept carefully and thoroughly washed and cleaned, and when so directed by this board, fumigated so that all dirt and filth, or causes of disease, are removed from the inside, steps, and platform of said cars.

Sec. 19. No person shall burn within the city of Plainfield any matter or substance (other than coal, charcoal, wood, gas, or oils) which shall emit into the air or cause or produce or cast off any foul or obnoxious or offensive or hurtful or annoying or repulsive gas, smoke, or odors of any kind whatever.

Sec. 20. It shall be the duty of any owner, tenant, lessee, or occupant of any lot, ground, building, house, or stable in the city, on notice from this board, to forthwith remove therefrom any rubbish, waste paper, garbage, offal, or any offensive matter or thing; and it shall be the duty of any person, on notice from this board to abate any nuisance existing on any premises of which he may be the owner, tenant, lessee, or occupant. If any person shall refuse or neglect to remove any foul or noxious or hurtful matter or thing, or if any person shall refuse or neglect to abate any nuisance, then this board may proceed under the provisions of "An act to establish in this State boards of health and a bureau of vital statistics and to define their respective powers and duties," approved March 31, 1887, and acts amendatory thereof and supplemental thereto, and remove said nuisance, source of foulness, or cause of sickness, and shall recover by action of debt the expense incurred by said board by such removal.

Sec. 21. *Penalty.*—Every nuisance herein defined is prohibited and forbidden within the city, and any person or association of persons making, causing, permitting, or maintaining any of the said nuisances shall forfeit and pay a penalty of not less than $2, nor greater than $50, for every such offense, and in the case of a continuing offense shall be liable to a further penalty of $10 for each and every day after written notice of the offense from his board. [An amendment adopted July 7, 1911, to Article I of an ordinance adopted Dec. 18, 1902.]

CEREBROSPINAL MENINGITIS IN TEXAS.

According to the last information received, cerebrospinal meningitis is still present in Dallas, Fort Worth, Galveston, Waco, and many small towns in Texas. At Dallas the average number of new cases was at the time of the last report about 7 daily, at Fort Worth about 3, and at Waco 1 or 2 daily. The sanitary campaign includes the house quarantine of direct contacts until they are shown not to be carriers.

Surg. Guiteras at Galveston reports the occurrence of 3 new cases of cerebrospinal meningitis at Galveston on February 3, 1 new case February 5, 1 new case February 6, and 1 new case each February 8 and 9.

CEREBROSPINAL MENINGITIS IN OKLAHOMA.

With cerebrospinal meningitis present in Texas, it was to be expected that the disease would be found occurring in the neighboring States. Information for the State of Oklahoma is available, showing that from December 1, 1911, to January 25, 1912, a total of 72 positive and 2 suspected cases had been reported from 14 counties, as follows:

County.	Cases.	Deaths.
Garvin	3	[1] 3
Carter	5	4
Bryan	14	9
Love	17	7
Marshall	4	
McClain	[2] 3	2
Pittsburg	[2] 1	
Comanche	[3] 7	2
Johnson	1	[1] 1
McCurtain	1	[1] 1
Murray	1	[1] 1
Osage	10	4
Choctaw	2	
Pontotoc	2	[1] 2
Pawnee	3	
Total	74	36

[1] Free of disease Jan. 25.

[2] One suspect.

[3] Three in one family.

Considering that the disease is perhaps always present to some extent, this is not a large number of cases. The State department of health seems to have taken every possible means of keeping itself informed of the situation by the cooperation of the local authorities and the prompt reporting of cases and to have materially controlled the spread of the disease by the distribution of bulletins and circulars relative to its prevention and treatment, by the detail of trained men to the infected localities, and by the prompt examination by the State bacteriologist of specimens forwarded for diagnosis.

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,050 acres of land in Alameda County were covered with poison during the week ended January 27, 1912.

During the same period 6,100 acres of land in San Joaquin County and 7,040 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct, 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	264 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Jan. 27, 1912	3	[1] 129	65	
Fresno	do		[2] 64	64	
Oakland	do	6	[3] 553	460	
San Francisco	do	3	[4] 1,469	1,167	
Counties—					
San Joaquin	do		[5] 125	125	
Santa Clara	do		[6] 31	31	
Washington:					
City—					
Seattle	do		938	901	

[1] Identified: Mus norvegicus, 71; Mus musculus, 58.

[2] Identified: Mus alexandrinus, 54; Mus musculus, 10.

[3] Identified: Mus norvegicus, 472; Mus musculus, 81.

[4] Identified: Mus norvegicus, 765; Mus rattus, 198; Mus alexandrinus, 205; Mus musculus, 301.

[5] Identified: Mus norvegicus, 121; Mus alexandrinus, 2, Mus musculus, 2.

[6] Identified: Mus norvegicus, 31.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED FEB. 16, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Connecticut	Jan. 1-31			No case.
Iowa:				
Counties—				
Butler	Jan. 1-31	3		
Carroll	do	1		
Cerro Gordo	do	4		
Fayette	do	1		
Guthrie	do	1		
Linn	do	3		
Marshall	do	5		
Page	do	1		
Pottawattamie	do	3		
Sac	do	7		
Van Buren	do	2		
Webster	do	2		
Woodbury	do	3		
Worth	do	2		
Total for State		38		
*Kentucky:				
Newport	Jan. 28-Feb. 3	1		
Maryland	Jan. 1-31			No case.
Michigan:				
Counties—				
Allegan	Jan. 1-31	1		
Bay	do	1		
Butler	do	2		
Calhoun	do	13		
Eaton	do	7		
Genesee	do	4		
Hillsdale	do	3		
Ingham	do	1		
Ionia	do	17		
Jackson	do	101		
Kent	do	7		
Lenawee	do	58		
Macomb	do	1		
Monroe	do	11		
Montcalm	do	14		
St. Clair	do	1		
Washtenaw	do	2		
Wayne	do	18		
Wexford	do	4		
Total for State		266		
*Missouri:				
St. Louis	Jan. 28-Feb. 3	5		
New Jersey	Jan. 1-31			No case.
Pennsylvania	Dec. 1-31	20		
Tennessee:				
Counties—				
Knox—				
Knoxville	Jan. 28-Feb. 3	15		
Shelby	Jan. 1-31	4		
		19		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended Feb. 16, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Wisconsin:				
Counties—				
Adams	Jan. 1-31	2		
Dane	do	6		
Dodge	do	1		
Douglas	do	11		
Fond du Lac	do	1		
Iowa	do	6		
La Crosse	do	1		
Marathon	do	11	1	
Outagamie	do	2		
Polk	do	1		
Portage	do	4		
Trempealeau	do	1		
Waushara	do	4		
Wood	do	13		
Total for State		64	1	
Wyoming:				
Counties—				
Albany	Jan. 1-Dec. 31,1911	1		
Converse	do	4		
Fremont	do	17		
Laramie	do	63		
Natrona	do	1		
Sweetwater	do	18		
Total for State		104		
Grand total for the United States		517	1	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED JAN. 27, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	232	22	1	4		19	1			44	27	11	3
Boston, Mass	670,585	233	36	8	102	1	32		1		43	21	7	1
Chicago, Ill	2,185,283	758	139	16	54	4	153	8			163	70	15	4
Cleveland, Ohio	560,663	182	23	3	24	1	41	2			34	12	4	
New York, N. Y	4,766,883	1,564	264	26	608	10	267	8	4	1	506	195	38	10
Philadelphia, Pa	1,549,008	580	56	16	13	1	25	3			97	64	30	4
Pittsburgh, Pa	533,905	173	28	5	3		22	1			34	15	8	
St. Louis, Mo	687,029	235	41	4	7		20		20		53	18	4	1
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	152	29		11		18		1		15	9	7	1
Cincinnati, Ohio	364,463	141	12	1	7		21	2	1		30	17	1	1
Detroit, Mich	465,766	172					29	2	2					

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 27, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 300,000 to 500,000 inhabitants—Continued.														
Los Angeles, Cal	319,198	127	3	....	1	....	15	....	7	1	16	23	1	....
Milwaukee, Wis	373,857	139	15	4	99	2	41	2	....	....	24	13	27	
Newark, N. J	347,469	121	13	....	....	1	14	....	....	....	24	16	3	
New Orleans, La	339,075	148	7	....	1	....	18	....	4	....	29	21	2	....
San Francisco, Cal	416,912	124	1	1	230	1	8	....	....	....	24	13	1	....
Washington, D. C	331,069	140	8	1	2	....	11	1	....	....	29	21	9	....
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	69	3	....	4	....	5	1	....	....	....	9	....	....
Jersey City, N. J	267.779	86	....	....	....	....	....	....	....	....	....	10	....	....
Kansas City, Mo	248,381	22	11	1	2	....	3	....	....	....	3	7	1	
Providence, R. I	224,326	82	17	....	6	....	13	1	....	....	11	7	....	
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	26	1	1	4	....	3	1	....	....	8	....	1	
Cambridge, Mass	104,839	38	12	4	....	....	11	1	....	....	10	2	1	....
Columbus, Ohio	181,548	61	9	1	13	1	12	....	1	....	5	10	....	
Dayton, Ohio	116,577	36	....	....	....	....	....	....	....	....	1	4	1	
Fall River, Mass	119,295	39	5	8	....	....	2	....	....	....	6	3	....	....
Grand Rapids, Mich	112,571	40	2	....	....	....	5	....	....	....	4	1	5	
Lowell, Mass	106,294	50	2	....	8	....	7	....	....	....	2	4	1	
Nashville, Tenn	110,364	42	1	....	2	....	3	....	....	....	7	5	3	....
Oakland, Cal	150,174	45	....	....	3	....	1	....	....	....	1	2	....	
Omaha, Nebr	124,096	40	1	....	1	....	1	....	....	....	....	1	1	
Spokane, Wash	104,402	....	....	....	43	....	4	....	14	....	....	3	1	
Toledo, Ohio	168,497	64	7	2	14	....	9	2	....	....	....	6	10	
Worcester, Mass	145,986	48	8	1	....	....	19	....	....	....	2	4	....	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	8	1	1	....	....	1	....	....	....	....	2	1	
Bayonne, N. J	55,545	17	1	....	....	....	2	....	....	....	2	1	....	
Brockton, Mass	56,878	15	....	....	30	....	3	....	....	....	5	1	....	
Camden, N. J	94,538	....	8	1	....	....	1	....	....	....	....	....	1	
Duluth, Minn	78,466	19	....	....	....	....	2	....	4	....	3	3	1	
Elizabeth, N. J	73,409	32	3	1	6	....	8	....	....	....	....	2	....	
Evansville, Ind	69,647	26	3	....	....	....	2	....	7	....	4	4	7	
Harrisburg, Pa	64,186	13	4	....	....	....	....	....	....	....	6	2	....	
Hartford, Conn	98,915	8	4	....	....	....	4	2	....	....	4	4	1	
Hoboken, N. J	70,324	3	....	....	....	....	....	....	....	....	1	....	1	
Johnstown, Pa	55,482	30	1	....	2	....	1	....	....	....	....	2	....	
Lawrence, Mass	85,892	26	2	....	1	1	1	....	....	....	2	4	1	
Lynn, Mass	89,336	20	4	....	7	....	8	....	....	....	4	2	....	
Manchester, N. H	70,063	21	6	1	2	....	2	....	....	....	1	1	....	
New Bedford, Mass	96,652	28	1	....	3	....	4	....	....	....	3	2	5	
Oklahoma City, Okla	64,205	18	....	....	....	....	....	....	....	....	1	2	....	
Passaic, N. J	54,773	23	3	....	3	....	....	....	....	....	4	1	....	
Pawtucket, R. I	51,622	....	....	....	....	....	....	1	....	....	....	1	....	
Peoria, Ill	66,950	36	2	1	1	....	2	....	....	....	....	5	....	
Reading, Pa	96,071	27	5	....	1	....	2	....	....	....	1	2	2	
San Antonio, Tex	96,614	14	....	....	18	....	5	....	1	....	....	11	3	
Schenectady, N. Y	72,826	22	2	....	....	....	3	....	....	....	3	3	....	
South Bend, Ind	53,684	16	....	....	....	....	1	....	....	....	....	1	4	
Springfield, Ill	51,678	20	4	....	....	....	....	....	1	....	....	3	2	
Springfield, Mass	88,926	28	2	....	35	....	9	....	....	....	2	1	2	
Terre Haute, Ind	58,157	....	3	....	....	....	....	....	....	....	....	4	3	
Trenton, N. J	96,815	37	3	....	....	....	6	....	....	....	10	3	....	
Wilkes-Barre, Pa	67,105	26	8	....	148	1	1	....	....	....	....	....	....	
Wilmington, Del	87,411	26	....	....	....	....	....	....	....	....	....	4	....	
Yonkers, N. Y	79,803	....	1	....	10	....	5	....	....	....	2	1	....	

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 27, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	12	5											
Auburn, N. Y	34,668	15									1	8		1
Aurora, Ill	29,807	13	1				1					1		
Berkeley, Cal	40,434	8			5									
Binghamton, N. Y	48,443	26	1		1						5	3	1	
Brookline, Mass	27,792	6	1		3									
Chelsea, Mass	32,452	10	2		16		2		1			1		
Chicopee, Mass	25,401	3	1	1	1		1						2	
Danville, Ill	27,871	18	5				3					4		
Dubuque, Iowa	38,494	10										1		
East Orange, N. J	34,371	9	2		1		4	1			2		1	
Elmira, N. Y	37,176	11	1		1							1		
El Paso, Tex	39,279	22					4		1			5		
Everett, Mass	33,484	8	2		2		1				1	1	1	
Fitchburg, Mass	37,826	16	2								2	1		
Haverhill, Mass	44,115		2		17		2				4	8		
Kalamazoo, Mich	39,437	13	1		1		1				8	1	1	
Knoxville, Tenn	36,346	17	1		1				3			5		
La Crosse, Wis	30,417	19	7				1					2		
Lancaster, Pa	47,227						1				1		1	
Lexington, Ky	35,099	16	3		4		1				2	2		
Lynchburg, Va	29,494	8	2		13		3				1		1	
Malden, Mass	44,404	11	1		1		5				1	1		
Montgomery, Ala	38,136	12			3				1		2	8		
Newcastle, Pa	36,280		3				1						12	
Newport, Ky	30,309	18	1								1	1		
Newton, Mass	39,806	8			2							1		
Niagara Falls, N. Y	30,445	15	3		1								4	1
Norristown, Pa	27,875	14			29	1	2					1	1	
Orange, N. J	29,630		1		10		1						2	
Pasadena, Cal	30,291						3						1	
Pittsfield, Mass	32,121	11	2											
Portsmouth, Va	33,190	14	3				2		2			1		
Racine, Wis	38,002	7	6											
Roanoke, Va	34,874	13	3		13		2				3	1		1
ockford, Ill	45,401	27	2									1		1
alem, Mass	43,697	12			2		3					1		
an Diego, Cal	39,578		1				1				6	6		
outh Omaha, Nebr	26,259	6									2	2		
uperior, Wis	40,384	14	1				1					3		
aunton, Mass	34,259	15	1		3		2							
altham, Mass	27,834	8			16		2				1	1		
est Hoboken, N. J	35,403	17	6								3			
heeling, W. Va	41,641	15	2		2						3		6	1
illiamsport, Pa	31,860	7			1		1				2			
ilmington, N. C	25,748	14			1		2		7		1	3		
ork, Pa	44,750		2		1						2			
anesville, Ohio	28,026	8	4										6	
Cities having less than 25,000 inhabitants.														
nn Arbor, Mich	14,817	9										1		
eaver Falls, Pa	12,191				1		2						3	
ennington, Vt		3					3							
raddock, Pa	19,957	8	2				1							
utler, Pa	20,782	10	2											
mbridge, Ohio	11,327	4												
rbondale, Pa	17,040	3					4							
inton, Mass	13,075	6									1			
ffeyville, Kans	12,687		1										2	
lumbus, Ga	20,554	5												
ncord, N. H	21,497	11	1		1									
mberland, Md	21,839	10	1								1	1	4	1
nkirk, N. Y		2	4								1		1	
lesburg, Ill	22,089	4	1											
rrison, N. J	14,498	3	1											
mestead, Pa		5												

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 27, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants—Con.														
Kearny, N. J	18,659		2		1						3			
Kokomo, Ind	17,010	7					4		4		1	1		
La Fayette, Ind	20,081	6					1							
Lebanon, Pa	19,240		4								9		1	
Logansport, Ind	19,050	7	3	1							2	2		
Manistee, Mich	12,381						8							
Marinette, Wis	14,610	4	1		6									
Marlboro, Mass	14,579	7	1								1	2		
Massillon, Ohio		5									1			
Medford, Mass	23,150	8			3		1				1			
Melrose, Mass	15,715	5			7									
Moline, Ill	24,199	7	1								1	1	2	
Montclair, N. J	21,150	8									4	1		
Morristown, N. J	12,507	4									1			
Nanticoke, Pa	18,857	6	1		14									
Newburyport, Mass	19,240	4	1								1			
North Adams, Mass	22,012	6	2	1	3		1				1			
Northampton, Mass	19,431	8			5		3					1		
Ottumwa, Iowa	22,012	12	1				1				1	2		
Peekskill, N. Y		6	3								1	1		
Plainfield, N. Y	22,250	2	1		3								1	
Portsmouth, N. H					1									
Pottstown, Pa		7										1		
Rutland, Vt	18,713	3												
Saratoga Springs, N. Y		6												
South Bethlehem, Pa	19,973	13	1		8						4	3	1	
Steelton, Pa	14,246	5	2						1	1	3	1		
Warren, Pa	11,081	4												
Wilkinsburg, Pa	18,924	4	2				2					1	1	
Woburn, Mass	15,308	5			2									

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (untabulated).

Florida.—Week ended February 3, 1912. Reports from the State show diphtheria present in 5 localities with 13 cases, malaria in 1 locality with 2 cases, smallpox in 8 counties with 68 cases, tuberculosis in 9 localities with 20 cases, typhoid fever in 5 localities with 16 cases.

New Jersey.—Month ended January 10, 1912. Population, 2,537,167. Total number of deaths from all causes 2,694, including diphtheria 46, measles 8, scarlet fever 11, tuberculosis 243, typhoid fever 30.

Pennsylvania.—Reports received from the State department of health show as follows:

Mortality.—Month of November, 1911. Total number of deaths 8,591, including typhoid fever 173, scarlet fever 35, diphtheria 287, measles 19, whooping cough 44, influenza 68, malaria 1, tuberculosis of the lungs 669, tuberculosis of other organs 119, cancer 415, diabetes 74, meningitis 46, acute anterior poliomyelitis 4, pneumonia 858, diarrhea and enteritis, under 2 years 289, diarrhea and enteritis, over 2 years 57, Bright's disease 551, early infancy 535, suicide 85, accidents in mines 93, railway injuries 117, other forms of violence 448, all other diseases 3,624.

Morbidity.—Month of December, 1911. Total number of cases of communicable diseases reported 10,311, including anterior poliomyelitis 14, anthrax 1, cerebrospinal meningitis 7, chickenpox 1,697, diphtheria 2,012, erysipelas 133, German measles 29, rabies 1, malarial fever 4, measles 1,651, mumps 341, pneumonia 649, puerperal fever 7, scarlet fever 947, smallpox 20, tetanus 9, trachoma 3, trichiniasis 2, tuberculosis 1,055, typhoid fever 1,000, whooping cough 729.

FOREIGN AND INSULAR.

HAWAII.

Death from Plague at Honokaa.

Chief Quarantine Officer Ramus at Honolulu reports, February 10, that a death from plague occurred at Honokaa February 9.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910. The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911, and a fatal case February 9, 1912.

The last plague-infected rat was found at Honokaa December 18, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

	Week ended Jan. 13.	Week ended Jan. 20.
Total number of rats and mongoose taken	511	440
Rats trapped	487	421
Mongoose trapped	10	13
Rats shot from trees	14	6
Examined bacteriologically	451	381
Classification of rats trapped:		
Mus alexandrinus	66	34
Mus musculus	97	89
Mus norvegicus	20	30
Mus rattus	304	268
Classification of rats shot from trees:		
Mus alexandrinus	7	....
Mus rattus	7	6

Mosquito-eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy:

Mosquito-eradication measures conducted at Honolulu from Jan. 8 to 13, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in—	Cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled.	Ordered repaired.	Screened.	Stocked with fish that destroy mosquito larvæ.
Gutters, house	2,282	54	350	1,820							
Gutters, street	340	11		201							
Standing water	701	129		590	62			9			2
Cesspools	806	12	3	761					5		
Privy vaults	889			806							
Holes and low places	563	168		315	45			155			
Catch basins	235	6		161		38					
Leaky fixtures	61			4					57		
Swamps	21	5		8	2						3
Ponds	40	3		9							3
Troughs and tanks	119	28		16		78					
Tubs and other receptacles	356	38		16		284					
Tin cans, bottles, etc	1,467	95					1,467				
Water barrels	245	86		15		55				129	
Vacant houses		1									
Holes in trees	1,121	51						1,121			
Tiger lilies	27	25				27					

Mosquito-eradication measures conducted at Honolulu from Jan. 15 to 20, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in—	Cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled.	Ordered repaired.	Screened.	Stocked with fish that destroy mosquito larvæ.
Gutters, house	2,844	86	541	2,050					3		
Gutters, street	108	18		88	15						
Standing water	1,234	202		751	41			5			
Cesspools	684	3	4	583				1			
Privy vaults	864			792							
Holes and low places	719	93		145	3			425			
Catch basins	222	16		28		38			7		
Leaky fixtures		73		4					48		
Plants, etc	1,310	224									
Swamps	10	2		1	1						3
Ponds	24	6		5	1						3
Troughs and tanks	155	59		11		62			3	41	1
Tubs and other receptacles	412	72		3		221					
Tin cans, bottles, etc	1,134	77					1,134				
Water barrels	215	182		40		55				5	
Vacant houses		4		2							
Holes in trees	421	19						421			

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports cholera and plague as follows:

Week ended December 16, 1911. At Calcutta, 28 deaths from cholera and 1 death from plague; in all Bengal, 530 cases of plague with 415 deaths; in all India, 9,951 cases of plague with 8,191 deaths.

Week ended December 23, 1911. At Calcutta, 24 deaths from cholera and 8 from plague; in all Bengal, 407 cases of plague with 329 deaths; in all India, 8,643 cases of plague with 7,189 deaths. Week ended December 30, 1911. At Calcutta, 21 deaths from cholera and 6 from plague; in all Bengal, 1,149 cases of plague with 947 deaths; in all India, 9,932 cases of plague with 7,903 deaths.

Karachi—Plague in 1911.

The following statement of plague in Karachi during the year 1911 was received from Consul Lupton:

The year ended December 31, 1911, was marked by a great increase in the number of cases of bubonic plague and deaths from the disease, there having been 3,273 cases and 3,046 deaths reported as against 1,727 cases and 1,661 deaths in 1910. With a total population of 149,000 this gives the following percentages:

	Cases per 1,000.	Deaths per 1,000.
1910	11.5+	11.1+
1911	21.9+	20.4+

PLAGUE—KARACHI, 1911.

Week ended—	Cases.	Deaths.	Week ended—	Cases.	Deaths.	Week ended—	Cases.	Deaths.
Jan. 7	15	15	May 6	285	272	Sept. 2	6	8
14	26	25	13	281	258	9	4	4
21	29	29	20	196	189	16		
28	15	15	27	172	165	23	1	1
Feb. 4	41	40	June 3	80	81	30	2	1
11	49	50	10	40	40	Oct. 7		
18	50	50	17	24	22	14		
25	65	63	24	10	13	21	2	2
Mar. 4	95	79	July 1	6	4	28	2	2
11	101	94	8	5	4	Nov. 4	1	1
18	83	79	15	13	13	11	8	7
25	115	111	22	3	3	18	6	5
Apr. 1	168	154	29	6	6	25	2	1
8	299	265	Aug. 5	6	6	Dec. 2	3	3
15	281	261	12	4	4	9	2	1
22	351	309	19	3	2	16	3	3
29	328	309	26	5	2	23	1	1
						30	6	6

IRELAND.

Belfast—Typhus Fever.

Consul Hay reports that during the week ended December 16, 1911 3 cases of typhus fever were reported in Belfast and during the two weeks ended January 13, 1912, 2 cases, with 1 death.

ITALY.

No Cholera Reported.

According to information received from the ministry of foreign affairs no cases of cholera were reported in the Kingdom of Italy during the week ended January 6, 1912.

Florence—Typhus fever.

Consul Keena reports the occurrence of 7 deaths from typhus fever at Florence during the month of December, 1911.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo week ended January 20, 1912:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Jan. 17	Canopic	Boston	740	165	830
18	Calabria	New York	145	24	290
20	Pannonia	do			
	Total		885	189	1,120

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Jan. 18	Canopic	Boston	53	80	125
19	Calabria	New York	157	80	150
19	Pannonia	do			
	Total		210	160	275

JAMAICA.

Kingston—Typhus Fever.

Consul Snyder reports the occurrence of a death from typhus fever at Kingston during the week ended January 13.

JAPAN.

Kobe—Examination of Rats.

Consul West reports: From January 1 to December 17, 1911, 354,291 rats were destroyed in Kobe. These were all examined for plague infection. No plague-infected rat was found.

JAVA.

Batavia—Typhus Fever.

Consul Rairden reports that during the three weeks ended December 30, 1911, 4 cases of typhus fever with 2 deaths were reported at Batavia.

MEXICO.

Restrictions on Account of Cerebrospinal Meningitis.

The superior board of health of Mexico has issued instructions, effective January 30, 1912, prohibiting the entry into Mexico, except at the frontier towns of Laredo, Ciudad Porfirio Diaz, Ciudad Juarez, and Nogales, and the ports of Tampico and Vera Cruz, of persons arriving from certain localities in Texas in which cerebrospinal meningitis is prevalent. The localities specifically mentioned are Taylor, Waco, Austin, Dallas, Houston, Italy, Teague, Fort Worth, Smithville, Clarksville, Rockwall, and Emory.

Smallpox.

The official report of smallpox at Magdalena, State of Sonora, dated January 24, shows as follows: Cases present in the isolation hospital 85; new cases, January 21 to 24, 5; deaths from smallpox during the same period 5.

At Mazatlan Consul Alger reports: Smallpox continues present, with 18 cases in the lazaretto. About 20 per cent of the population, including troops, school children, and employees in factories, have been vaccinated.

Merida—Yellow Fever.

During the week ended January 27, 1 case of yellow fever with 1 death was reported at Merida. The total number of cases reported since August 1, 1911, is 56, with 28 deaths.

RUSSIA.

Commission for the Suppression of Plague.

According to information received January 22 a commission appointed by the Imperial Government is at work in the Government of Astrakhan in carrying out measures for the suppression of plague.

TUNIS.

Status of Cholera.

According to information received from the ministry of foreign affairs at Paris 33 cases of cholera with 25 deaths were reported in the Regency of Tunis from December 22, 1911, to January 4, 1912.

TURKEY.

Cholera in Albania.

Information has been received of a cholera outbreak in the Province of Albania, European Turkey. To January 22, 17 cases with 8 deaths were reported at Janina and at Loros 12 cases.

VENEZUELA.

Caracas—Yellow Fever.

The sanitary commission at Caracas reports the occurrence of 6 cases of yellow fever during the period from December 15 to 31, 1911.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED FEB. 16, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases 22, deaths 12, mainly in the military hospital.
India:				
Calcutta	Dec. 10-30		73	
Madras	Jan. 1-13	53	53	Report for Dec. 23 not received.
Indo-China:				
Saigon	Dec. 18-24	311	212	
Tunis Regency	Dec. 22-Jan. 24	33	25	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended Feb. 16, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Merida	Jan. 21-27	1	1	
Portuguese Guinea:				
Bolama	Dec. 19-25	[1] 1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Dec. 25-31	6		

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Para	Jan. 7-20	7	3	
China:				
Hongkong	Dec. 24-30	1	1	
Egypt				Total, year 1911: Cases, 1,656; deaths, 1,041.
Provinces—				
Assiout	Jan. 1-25	12	8	
Behera	do	3	2	
Garbieh	do	1		
Kena	do	1	1	
Minieh	do	2	1	
Hawaii:				
Honakaa	Feb. 9	1	1	
India:				
Bombay	Dec. 29-Jan. 13	17	13	
Calcutta	Dec. 14-30		10	
Karachi	Jan. 1-13	23	22	
Madras	Jan. 1-6	1	1	
Indo-China:				
Saigon	Dec. 18-24	3		
Singapore:				
Straits Settlements	Dec. 24-30	3	3	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	Jan. 2-15	1	1	And vicinity.
Brazil:				
Rio de Janeiro	Dec. 24-Jan. 6	2		
Canada:				
Ottawa	Jan. 21-27	10		
Quebec	Jan. 28-Feb. 3	35		
China:				
Canton	Dec. 16-30	15	2	
Hongkong	Dec. 24-30	18	15	
Germany	Jan. 14-27	7		
India:				
Bombay	Dec. 31-Jan. 13	27	15	
Madras	Jan. 1-13	18	10	
Indo-China:				
Saigon	Dec. 18-24	2		
Italy:				
Leghorn	Jan. 14-27	28		
Naples	Jan. 14-20	6		
Palermo	Jan. 15-20	151	49	
Turin	Jan. 15-21	2		
Java:				
Batavia	Dec. 24-30	2		
Mexico:				
Aguascalientes	Jan. 21-28		1	
Chihuahua	Jan. 15-21	2		
Juarez	Jan. 21-Feb. 3	2	2	
Magdalena	Jan. 21-27		6	Cases in the lazaretto, 81.
Mazatlan	Jan. 24-30		4	Cases in the lazaretto, 18.
arie	Jan. 21-27		6	
Rus a:				
scow	Dec. 24-Jan. 13	9	3	
[illegible]	do	3		
Petersburg	Dec. 31-Jan. 6	4	3	
[illegible]				
ncia	Jan. 14-27	35	1	

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[1] From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Jan. 31, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued

Reports Received during Week ended Feb. 16, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Straits Settlements:				
Singapore	Dec. 18-30	3	2	
Turkey in Europe:				
Constantinople	Jan. 15-21		9	
Janina	Jan. 22	17	8	
Loros	do	12	7	
Uruguay:				
Montivideo	Nov. 1-30	4	1	
Venezuela:				
Caracas	Dec. 15-31	6		

REPORTS RECEIVED FROM DEC. 30, 1911, TO FEB. 9, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Ras-el-Ketib	Dec. 27		2	In the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37.
Backs-Bodog	Dec. 10-16	9		
Jasz-Nagykun-Szolnok	Dec. 3-23	11		
Torontal	Nov. 19-Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24-Oct. 9: Cases, 322; deaths, 256.
Batavia	Nov. 12-Dec. 23	21	8	
India:				
Calcutta	Nov. 5-Dec. 9		204	
Madras	Nov. 26-Dec. 30	347	277	Madras Presidency, Dec. 1-31: Cases, 3,879; deaths, 2,412.
Rangoon	Oct. 1-Nov. 30	6	3	
Indo-China:				
Saigon	Nov. 20-Dec. 17	203	169	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanissetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including cases previously reported.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Nov. 6-28: 1 death; including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia:				
Belgrade, district	Nov. 26-Dec. 16		1	Declared free Dec. 31.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Feb. 9, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Siam:				
Bangkok	Nov. 5–Dec. 2		149	
Straits Settlements:				
Singapore	Nov. 5–18	3	3	
Tripoli:				
Tripoli	Oct. 25–Nov. 10			150 to 200 among the civil population and 25 to 30 among the military, Dec. 21, 1911.
Tunis Regency				Total Nov. 25–Dec. 21: Cases, 325; deaths, 371.
Beja district	Nov. 25–Dec. 7	30	35	
Bizerta district	Nov. 25–Dec. 5	9	15	
Turkey in Asia:				
Adana	Dec. 2–6	16	5	
Aleppo	Jan. 26			Present.
Amara	Oct. 15	1	1	
Basra	Oct. 22–28	14	10	
Erzeroum, vilayet	Sept. 11–16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20–28	10	10	
Kharput	Nov. 19–Dec. 30	47	47	
Jiddah	Dec. 2–24	323	210	
Mekka	Dec. 4–24	905	879	Sept. 1–Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1–7	2	1	
Osmania	Dec. 1–6	2	4	
Sinope	Dec 7	2	1	
Trebizond and vicinity	Sept. 18–23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24–Jan. 2	6	1	
Durazzo	Dec. 7–13	2		
Saloniki, vilayet	Nov. 6–19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Manaos	Nov. 19–Jan. 6		8	
Para	Dec. 9–16	1	1	
Ecuador:				
Bucay	Nov. 16–30	2		
Duran	Dec. 1–15	3	2	
Guayaquil	Nov. 16–Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Espita	Dec. 31–Jan. 6	1		
Maxcanu	do	1		
Merida	Nov. 12–Jan. 20	10	7	Total Aug. 1–Jan. 20: Cases, 55; deaths, 27.
Temax	Dec. 31–Jan. 6	1		
Venezuela:				
Caracas	Nov. 16–Dec. 7	11		
Sabana Grande	Dec. 12			Epidemic.
At sea	Dec. 17–23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096. Vol. XXVI.
Brazil:				
Bahia	Sept. 1–30		2	
Para	Dec. 24–30	5	1	
Pernambuco	Oct. 16–Jan. 16		4	
Rio de Janeiro	Nov. 12–Dec. 23	6	3	
British East Africa:				
Kismayu	Oct. 15–25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12–Jan. 6	10	4	
Pisagua	Nov. 1–30	8		

CHOLERA, YELLOW FEVER, PLAGUE, A

Reports Received during Week e

SMALLPOX—Contin

Places.	Date.	Cases.
Straits Settlements:		
Singapore	Dec. 18-30	3
Turkey in Europe:		
Constantinople	Jan. 15-21	
Janina	Jan. 22	17
Loros	....do	12
Uruguay:		
Montivideo	Nov. 1-30	4
Venezuela:		
Caracas	Dec. 15-31	6

REPORTS RECEIVED FROM DEC. 3

[For reports received from July 1, 1911, to Dec. 29, 1911, see I
In accordance with custom, the tables of epidemic diseases a
begun.]

CHOLERA.

Places.	Date.	Cases.
Arabia:		
Ras-el-Ketib	Dec. 27	
Austria-Hungary:		
Coastland—		
Capodistria	Dec. 14-24	2
Croatia and Slavonia		
Sriem	Oct. 22-Dec. 16	36
Hungary		
Backs-Bodog	Dec. 10-16	9
Jasz-Nagykun-Szolnok	Dec. 3-23	11
Torontal	Nov. 19-Dec. 16	17
Bulgaria:		
Burgas	Nov. 22-23	2
Varna	Nov. 6	1
Dutch East Indies		
Batavia	Nov. 12-Dec. 23	21
India:		
Calcutta	Nov. 5-Dec. 9	
Madras	Nov. 26-Dec. 30	347
Rangoon	Oct. 1-Nov. 30	6
Indo-China:		
Saigon	Nov. 20-Dec. 17	203
Italy		
Provinces—		
Caltanisetta	Nov. 26-Dec. 31	9
Girgenti	....do	105
Messina	Nov. 26-Dec. 2	3
Syracuse	Nov. 26-Dec. 23	15
Malta	Nov. 19-Dec. 10	6
Montenegro	Nov. 4-11	9
Persia:		
Adaban	Nov. 4	1
Philippine Islands:		
Province—		
Union	Oct. 29-Dec. 4	5
Roumania		
Districts—		
Braila	Sept. 11-Dec. 13	84
Convoluri	Oct. 31-Nov. 28	[illegible]
Doliju	Nov. 6-Dec. 13	
Jalonitza	Oct. 31-Nov. 28	
Konstanza	Oct. 30-Nov. 28	
Prahova	Nov. 6-23	
Talomita	....do	
Tulcea	Nov. 24-Dec.	
Servia:		
Belgrade, district	Nov. 20-D	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Contin

Reports Received from Dec. 30, 1911, to Feb. 9, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Siam:				
Bangkok	Nov. 5-Dec. 2		140	
Straits Settlements:				
Singapore	Nov. 5-25	3	2	
Tripoli:				
Tripoli	Oct. 29-Nov. 28			120 to 200 among the civil population and 20 to 30 among the military, Dec. 21, 1911. Total Nov. 28-Dec. 21: Cases, 331; deaths, 271.
Tunis Regency				
Beja district	Nov. 25-Dec. 7			
Bizerta district	Nov. 25-Dec. 8			
Turkey in Asia:				
Adana	Dec. 1-4	20	25	
Aleppo	[illegible]	9	25	
Amara	[illegible]	16	[illegible]	
Basra	Oct. 22-28		5	
Erzeroum, vilayet	Sept. 21-30	1	2	Present.
Erzeroum	[illegible]	54	10	
Kaifa	Dec. 5	280	29	
Kerbelah	[illegible]	111	6	
Kharput	[illegible]	[illegible]	31	Present.
Jiddah	[illegible]	[illegible]	47	
Mekka	[illegible]	[illegible]	223	
Mersina	[illegible]	[illegible]	379	
Osmania	[illegible]	[illegible]	[illegible]	
Sinope	[illegible]	[illegible]	[illegible]	
Trebizond and vicinity	[illegible]	[illegible]	[illegible]	
Tripoli	[illegible]	[illegible]	[illegible]	
Turkey in Europe:				
Constantinople	[illegible]	[illegible]	[illegible]	Sept. 1-Dec. 26: Cases, [illegible]; deaths, [illegible].
Durazzo	[illegible]	[illegible]	[illegible]	
Saloniki, vilayet	[illegible]	[illegible]	[illegible]	Present.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	[illegible]	[illegible]	1	
Para	[illegible]	[illegible]	1	[illegible]
Ecuador:				
Bucay	[illegible]	[illegible]	[illegible]	
Duran	[illegible]	[illegible]	[illegible]	
Guayaquil	[illegible]	[illegible]	[illegible]	
Milagro	[illegible]	[illegible]	[illegible]	
Mexico:				
Espita	[illegible]	[illegible]	[illegible]	
Maxcanu	[illegible]	[illegible]	[illegible]	
Merida	[illegible]	[illegible]	[illegible]	
Temax	[illegible]	[illegible]	[illegible]	
Venezuela:				
Caracas	[illegible]	[illegible]	[illegible]	
Sabana Grande	[illegible]	[illegible]	[illegible]	
At sea	[illegible]	[illegible]	[illegible]	

[illegible]

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Feb. 9, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy	Jan. 15			Present.
Hongkong	Dec. 9-23	3	2	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 9: Cases, 1,777: deaths, 1,262.
Pasoeroean Residency, Malang District.	Nov. 12-Dec. 30	56	25	
Soerobaya	Oct. 17-27	2		
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Ecuador:				
Guayaquil	Nov. 16-Dec. 15	102	42	
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Oct. 14-Dec. 27	38	36	
Behera	Oct. 15-Dec. 26	3	1	
Galioubeh	Oct. 5-Dec. 26	1		
Kena	Nov. 20-Dec. 13	3	3	
Minieh	Dec. 13	1		
India:				
Bombay	Nov. 19-Dec. 30	57	53	
Calcutta	Nov. 11-Dec. 9		30	
Karachi	Nov. 26-Dec. 30	15	14	Total, year 1911: Cases, 3,273: deaths, 3,046.
Rangoon	Oct. 1-Nov. 30	38	39	
Bombay Presidency and Sind.	Oct. 29-Dec. 9	27,376	19,684	
Madras Presidency	do	3,589	2,886	
Bengal	do	1,537	1,136	
United Provinces	do	6,139	4,975	
Punjab	do	820	579	
Burma	do	99	84	
Central Provinces	do	3,803	2,838	
Coorg	do	45	22	
Mysore State	do	3,600	2,787	
Hyderabad State	do	6,012	5,651	
Central India	do	3,403	2,825	
Rajputana and Ajmere Merwara.	do	302	246	
North West Province	do	1	1	Total for India, Oct. 29-Dec. 9: Cases, 56,717; deaths, 43,714.
Indo-China:				
Saigon	Nov. 13-Dec. 17	12	5	
Mauritius	Nov. 3-23	13	8	
Natal:				
Durban	Jan. 17		1	
Peru:				
Salaverry	Dec. 25-Jan. 9			Present in vicinity.
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Nov. 28-Dec. 20	87	84	
Siam:				
Bangkok	Nov. 4-Dec. 2		2	
Straits Settlements:				
Singapore	Nov. 5-Dec. 16	12	11	

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Arabia:				
Aden	Nov. 28-Jan. 1	4	2	
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	Oct. 1-Nov. 30		31	
Austria-Hungary:				
Galicia	Dec. 24-30	1		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Nov. 30		246	Report for Oct. 1-15 not received
Rio de Janeiro	Nov. 26-Dec. 2	1	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Feb. 9, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
British Columbia—				
Nelson	Dec. 24-30	1		
Manitoba—				
Winnipeg	Jan. 14-20	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Jan. 20	35		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-13		1	
Quebec—				
Montreal	Dec. 17-Jan. 27	8		
Quebec	Dec. 10-Jan 27	160	1	
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Iquique	Dec. 10-16	2		
La Serena	Nov. 21-30	14		
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		
China:				
Canton	Nov. 11-Dec. 16	25	4	
Chungking	Nov. 18-25			Present.
Hongkong	Nov. 12-Dec. 23	54	41	
Nanking	Dec. 10-16			Do.
Shanghai	Dec. 11-17		1	
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald from Spain and Canary Islands, case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-16	1		
France:				
Marseille	Nov. 1-30		1	
Paris	Dec. 3-Jan. 13	43	2	
Germany				Total, Dec. 31-Jan. 13: cases, 2.
India:				
Bombay	Nov. 19-Dec. 30	44	24	
Calcutta	Nov. 19-Dec. 23		16	
Madras	Nov. 26-Dec. 30	22	13	
Rangoon	Oct. 1-Nov. 30	29	9	
Indo-China:				
Saigon	Nov. 13-Dec. 10	18		
Italy:				
Genoa	Dec. 1-Jan. 15	20	1	
Leghorn	Dec. 16-Jan. 13	56	1	
Messina	Nov. 19-Dec. 31		5	
Naples	Dec. 3-Jan. 6	36		
Palermo	Nov. 26-Jan. 13	1,652	546	
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Java:				
Batavia	Nov. 12-Dec. 23	15	4	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Jan. 7		2	
Chihuahua	Nov. 20-Jan. 14	62	19	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-20		1	
Juarez	Dec. 19-Jan. 20	5	2	
Magdalena	Dec. 23-Jan. 31		37	Jan. 31, 81 cases present.
Mazatlan	Dec. 11-Jan. 23		5	
Mexico	Nov. 26-Dec. 30	34	18	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Jan. 22		26	
San Antonio	Jan. 1-21	12	9	
San Carlos	Jan. 1-21			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Santa Ana	do	4		
San Luis Potosi	Nov. 12-Dec. 2	3		
Tampico	Dec. 1-31	4	4	
Tapachula	Nov. 1-Dec. 31		14	
Portugal:				
Lisbon	Dec. 9-Jan. 6	19		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Feb. 9, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia:				
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Dec. 23	12	4	
Odessa	Nov. 26-Dec. 23	7	1	
Reval	Nov. 1-30	1		
St. Petersburg	Nov. 19-Dec. 30	84	9	
Warsaw	Nov. 5-Dec. 2		185	
Spain:				
Cadiz	Nov. 1-Dec. 31		14	
Madrid	Dec. 1-31		1	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-31		5	
Valencia	Dec. 3-Jan. 12	72	9	
Straits Settlements:				
Singapore	Nov. 19-Dec. 16	9	2	
Switzerland:				
Zurich, Canton	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Jan. 13		29	
Turkey in Asia:				
Beirut	do	115	25	
Turkey in Europe:				
Constantinople	Dec. 4-Jan. 14		30	
Uruguay:				
Montevideo	Sept. 1-Oct. 31	19	3	
Venezuela:				
Caracas	Nov. 1-Dec. 31	11		
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Jan. 20	163,084	66								2	1		
Aden	Jan. 8	45,859	22	7				1						
Do	Jan. 15		20	7										
Aguascalientes	Jan. 28	40,000	37	1				1	2				1	
Athens	Jan. 15	250,010	109	22							1	2		
Amsterdam	Jan. 20	580,962	134	25								1	1	9
Antwerp	Jan. 13	327,668	78	9							1			
Asuncion	Dec. 23	75,000	25	2						1				
Barcelona	Jan. 24	591,272	215	27				1		2		8		
Batavia	Dec. 30	217,630							1					
Belfast	Jan. 20	385,492	136	15										12
Belgrade	do	90,050	28								2	1		
Berlin	Jan. 13	2,083,824	618	97						1	5	14	5	7
Bombay	Jan. 6	977,822	780	29	6			4					2	
Do	Jan. 13		805	44	7			11					8	
Bordeaux	Jan. 27	253,000	104	17							1		2	
Brussels	Jan. 20	739,684	189	23								2	3	
Canton	Dec. 16-30	1,000,000	230	35				2		5		3		
Calcutta	Dec. 16	890.493	583	30	1	28								
Do	Dec. 23		528	40	3	24								
Do	Dec. 30		592	39	6	21							1	
Charlottetown	Jan. 30	110,000										1		
Christiania	do	245,000	77	19								1	3	
Colombo	Dec. 23	213.974	180	14						5				
Do	Dec. 30		159	13						3				
Constantinople	Jan. 21	1.000,000	342	20		1		9		7	1	2	6	

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Copenhagen	Jan. 6	465,000	148	17								1	3	1
Dublin	..do	406,536	191	33						2	3	4	6	1
Do	Jan. 13		179	25						1	2	3	3	3
Do	Jan. 20		212	35						4	3	3	1	6
Dundee	..do	171,006	57	3								4		1
Edinburgh	Jan. 20	321,200	118	13							1		1	1
Georgetown	Jan. 6	56,000	53	4						1		1		
Gibraltar	Jan. 21	25,367	13							1				
Glasgow	Jan. 26	785,600	286							3		3	43	4
Gothenburg	Jan. 13	170,100	43	10								1		1
Do	Jan. 20		50	4								1		1
Halifax	Feb. 3	41,000	15	2								1		
Hamburg	Jan. 20	953,079	258	31						1	3	8	3	2
Havre	Jan. 20	136,169	72	12							1	2	1	
Hongkong	Dec. 30	396,488			1			15				2		
Juarez	Jan. 27	6,500	14					2						
Do	Feb. 2		6											
Karachi	Jan. 6	148,000	93		15									
Do	Jan. 13	149,000	91		7									
Kobe	Jan. 7	404,851	166									3		
Leeds	Jan. 20	445,568	134	22							1	6		4
Leghorn	..do	104,000	49											
Leith	..do	81,000	28	3							2	1		
Libau	Feb. 7	90,000								1		1		
Do	Feb. 14										1	1		
Do	Feb. 21									1	1	2		
Liege	Jan. 13	167,521	48	5										1
Liverpool	Jan. 20	752,055	253	24							2	7	2	1
Lubec	Jan. 13	100,000	36	4									1	
Madras	Jan. 6	518,660	618		1	34		4						
Do	Jan. 13		530			19		6					2	
Manchester	Jan. 20	631,533	226	32						1	1	6	14	4
Montreal	Feb. 3	466,197	160	35						1	3	2		
Moscow	Dec. 30	1,500,000	785	99						3	15	17	40	7
Do	Jan. 6		692	77				1		3	16	22	27	4
Do	Jan. 13		806	99				2	1	3	16	19	37	6
Valencia	Jan. 20	240,000	95	5						1		2		
Do	Jan. 27		122	3				1			1	2		
Winnipeg	..do	151,958	42	1							2	1	1	

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (untabulated).

ALGERIA—*Algiers.*—Month of December, 1911. Population, 172,397. Total number of deaths from all causes 317, including tuberculosis 59, typhoid fever 13.

ARGENTINA—*Buenos Aires.*—Month of November, 1911. Population, 1,351,663. Total number of deaths from all causes 2,025, including diphtheria 18, measles 16, scarlet fever 5, tuberculosis 211, typhoid fever 12.

BRAZIL—*Santos.*—Two weeks ended December 9, 1911. Population, 85,000. Total number of deaths from all causes 64, including diphtheria 2, measles 3.

GERMANY—*Kehl.*—Month of December, 1911. Population, 180,193. Total number of deaths from all causes 227, including diphtheria 1, scarlet fever 3, tuberculosis 28, typhoid fever 1.

GREAT BRITAIN.—Week ended January 13, 1912.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 15.4 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 20.3 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Newry, viz., 8.7 per 1,000, and the highest at Kilkenny, viz., 54.6 per 1,000.

Scotland.—The deaths registered in 18 towns correspond to an annual rate of 2 per 1,000 of the population, which is estimated at 2,182,400. The highest rate was recorded at Aberdeen, viz., 21.9, and the lowest at Partick, viz., 11.4 per 1,000. The total number of deaths from all causes was 781, including diphtheria 10, measles 41, scarlet fever 6, typhoid fever 3.

ITALY—*Florence.*—Month of December, 1911. Population, 232,860. Total number of deaths from all causes 380, including diphtheria 1, measles 1, tuberculosis 50, typhus fever 7.

Genoa.—Two weeks ended January 15, 1912. Population 272,077. Total number of deaths from all causes 150, including diphtheria 1, tuberculosis 44.

MALTA.—Two weeks ended January 6, 1912. Population 213,395. Total number of deaths from all causes 111, including diphtheria 2, measles 1, smallpox 1, tuberculosis 9.

SOUTH AFRICA—*Johannesburg.*—Month of December, 1911. Population 237,220. Total number of deaths from all causes 420, including diphtheria 2, measles 1, tuberculosis 61, typhoid fever 17.

SPAIN—*Huelva.*—Month of December, 1911. Population 28,982. Total number of deaths from all causes 59, including tuberculosis 6.

TAHITI.—Four weeks ended January 19, 1912. Population, 4,000. Total number of deaths from all causes 14. No contagious diseases.

TURKS ISLANDS.—Two weeks ended January 27, 1912. Population, 1,681. Total number of deaths from all causes 3. No contagious diseases.

URUGUAY—*Montevideo.*—Month of November, 1911. Population, 321,224. Total number of deaths from all causes 421, including diphtheria 1, smallpox 1, tuberculosis 78, typhoid fever 1.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

VOL. XXVII. FEBRUARY 23, 1912. No. 8

PELLAGRA: A REPORT ON AN EPIDEMIOLOGIC STUDY.

By R. M. Grimm, Assistant Surgeon, Public Health and Marine-Hospital Service.

During September and October, 1911, the vicinities of Spartanburg, Chester, and Rockhill, S. C., were visited for the purpose of collecting data on the epidemiology of pellagra. The gravity of the pellagra situation in the vicinity of Spartanburg had been realized by the physicians and others. The other two communities were visited at the suggestion of the secretary of the State board of health of South Carolina. The work covered by this report consisted entirely of the collecting of facts and the recording of observations largely of an epidemiologic nature; comments and discussion of these facts are at present considered premature and have been purposely avoided.

While engaged in this work an attempt was made to see and to study as many cases of pellagra as possible and to collect any data which might have a possible bearing on the disease and which might possibly shed some light on its etiology. It was thought possible that some fact or circumstance might be found to be common to a number of cases which would suggest some more or less promising line along which further intensive studies could be made. It would have been desirable to report here upon the total number of pellagrins in any one or all of the vicinities visited, but the practicable impossibility of determining their number was evident from the fact that there were known to be pellagrins in the various communities who had not consulted a physician. Such a determination would have necessitated the taking of a census of the entire population of the community. The local practicing physicians were depended upon entirely for locating and reporting cases. It was the kindness and cooperation of the local profession that made it possible for me to collect the data included in this report. With the assistance of the various local physicians I was able to collect a series of 380 cases of pellagra (series SCY). These cases were distributed among the three vicinities as follows:

From Spartanburg and vicinity	202
From Chester and vicinity	79
From Rockhill and vicinity	99
Total	380

This report is made up only from the data pertaining to this series.

A 5 by 8 inch card was used for recording data in each case, which in conjunction with a supplementary blank was found to be fairly satisfactory. The two sides of the card are shown here and are self-explanatory. In this way notes were obtained upon the 380 cases of pellagra, including cases personally visited and cases and deaths reported to me.

FACE OF CARD.

Series
Case........ Name .... Address .... Date ....

Seen with .... Note .... Diagnosis ....

Reported by .... Nativity .... Occupation ....

Age.......... Sex.......... Race .... M. S. W. **Pellagrous** (present attack)

Family.................... **Personal**.............................. Date of onset ....

.... Residence at ....

(Town) (State)

.... Number and health of family ....

Children.................... Marriage ....

.... Food ....

.... Water supply ....

Remarks.................... Residences.............................. City, Town, Rural ....

.... Relation to water courses..

....

.... Remarks ....

....

....

....

REVERSE OF CARD.

PELLAGROUS (First Attack)

Date of..

Residence at...

Number and health of family...

Relation to other cases...

To heredity..

To animals...

Food...

Corn...

Water supply..

To watercourses...

....

....

ENVIRONMENT AND CONDITIONS

Topography..

Location of house—City, Town, Rural..................................

Economic..

Sanitation...

Watercourses ....

Water supply..

Remarks...

....

....

....

With reference to race and sex these cases were as follows:

	Cases visited.	Cases reported.	Deaths reported.	Total of group.	Percentage of whole.
White females	61	127	58	246	64.8
White males	19	58	18	95	25.0
Colored females	1	12	8	21	5.5
Colored males	2	3	5	10	2.6
Unclassed		8		8	2.1
Total	83	208	89	380	100.0

The 83 cases personally visited according to age were as follows:

Age group.	White.		Colored.		Total.
	Females.	Males.	Females.	Males.	
0 to 10 years	5	6		1	12
11 to 20 years	5	2			7
21 to 30 years	22	2			24
31 to 40 years	12	1	1		14
41 to 50 years	10	1			11
51 to 60 years	6	4		1	11
61 to 70 years	1	2			3
71 to 75 years		1			1
Total	61	19	1	2	83

Of this number, 53 were married, 21 were single (including 12 children), and 9 were widowed.

CONSIDERATION OF CASES VISITED.

Environment and conditions.—The counties visited are located in the Piedmont section of South Carolina, between the lower tidewater country on the east and the higher mountainous section on the west. Between the tidewater and the Piedmont sections there is a line of falls stretching across the State in a northeast-southwest direction. This is locally known as the "fall line," and it is from north of this line that most of the cases of pellagra in the State have been reported. The towns of Spartanburg, Chester, and Rock Hill are located above this line, but lie east of the mountains. Their elevations above the sea level are 875, 539, and 664 feet, respectively. The topography of the country here is hilly and offers good natural drainage. The many streams are usually swiftly flowing and have numerous falls. Running streams are abundant in these counties, and it is impossible for the people to live any great distance from some one of them. None of the pellagrous homes that I visited were located more than a half mile from a stream, and in the majority of cases there was a stream 200 or 300 yards from the house. The cotton-mill villages visited were found located in the vicinity of some running water. This was a common observation.

The locations of the homes of the cases personally visited were as follows:

In a cotton-mill village or in the cotton-mill section of a town	70
In a town, but not in the cotton-mill section	7
In the country	6
Total	83

The cotton-mill workers, among whom so many of the cases of this series occurred, appeared to be poor, overworked, and underfed. They were found living in cottages located around the mills in which they were employed. These little villages are usually well looked after by the mill operators, but the authority of the mill operators does not extend to the interior of the homes, where in many instances were evident the signs of poverty and extreme neglect. With the exception of a very few, it can be said that the general hygienic conditions of the homes visited among this class were uniformly bad. Specimens of the ordinary bed bug were collected from several of the homes by a tactful family physician, and in very few of them, indeed, were conditions such as to lead one to suspect the absence of this parasite.

A condition which adds greatly to the complexity of the pellagra situation among this class of people is that they seem to live at one place only for a short time. They are continually moving from one house to another in the same village, or from one village to another. Of the 83 cases seen only 40 were then living in the same house in which they developed the first symptoms of the disease. The remaining 43 had resided at various places since their first attack. Many of the cotton-mill workers of western South Carolina are natives of the mountains of North Carolina, who have moved to the cotton-mill villages, as the cotton mills offered them a better means of livelihood than the mountains of their native State. In several instances it was learned that the first symptoms of pellagra had developed in these persons shortly after they had moved from the mountains to the environment of the cotton-mill village.

Of this series of 83 cases visited there were 16 who did not belong to the cotton-mill class. Among these there were three female pellagrins who seemed to be in good economic circumstances, to be living under good sanitary conditions, and appeared to be neat and cleanly housekeepers.

The majority of the pellagrins were living in unscreened houses, but the exact number was not determined with reference to this point. In several of the communities visited, mosquitoes were found to be plentiful.

Occupation.—The occupation of the 83 cases seen was found to be as follows:

Cotton-mill people:	
Cotton-mill workers	17
Housework	38
Children	12
Farmer	1
Farmers' wives	4
Railroad man	1
Stonecutter	1
Housework (not mill people)	9
Total	83

Food.—The subject of diet in these cases proved under the circumstances to be too complex to furnish much definite information. The cotton-mill people obtain much of their food from the stores kept by the mill companies, but other stores are also patronized. The sources of food in these cases were found to be varied. Packed meats and canned goods figure largely as articles of diet, fresh vegetables to a limited extent only, and fresh meats to a variable extent. Generally speaking, the food used in the families of the pellagrins visited among this class was found to be largely imported and to consist of very few home-grown products.

Each one of the 83 pellagrins whom I saw gave a history of having used corn products more or less regularly as an article of diet, either as corn bread, "grits," or in some other form. Corn bread is used extensively in this section of the country and in recent years has been made largely from imported meal. On account of the passing of the old gristmill, to which the farmer took his corn and had it ground, the meal now used is chiefly that which has been ground at some of the large mills of the country and shipped out in large quantities. This kind of meal has been used by all of the 83 pellagrins excepting one. The exception was a farmer's wife, who stated positively that for years she had used only corn raised on her husband's farm. Her husband, however, kept a little "crossroads" store, stocked with the usual array of cans and boxes. It is needless to say that the store was drawn upon to furnish the family larder. No systematic examination of the meal used in these families was made, but it was learned that several lots which had been received at the stores of the cotton-mill companies had been condemned on account of the high degree of acidity which they showed.

Water supply.—The sources of water supply of the families in which these 83 cases occurred were found to be as follows:

Well:	
Driven	32
Dug	25
City supply	7
Well and city supply	6
Well and spring	6
Spring	4
Varied	3
Total	83

Heredity.—Practically all of the information obtained regarding these cases has no bearing, or is negative, on this point. The pellagrous mothers and the pellagrous children in this series are grouped below with reference to the condition of the children or mothers, respectively. Only children under 10 years of age are here considered and of the pellagrous mothers only those now having children which were born at or after their first attack of pellagra.

A. Pellagrous mothers.	
(a) With healthy children	5
(b) With pellagrous children	[1] 2
B. Pellagrous children.	
(a) With healthy mothers	10
(b) With pellagrous mothers	[2] 2

Domestic animals.—No relation could be found between any of the cases in this series and any of the domestic animals or diseases occurring among them. The one family having 4 cases kept 4 goats, which were apparently healthy.

Relation of cases.—In many instances the relation of one case to another was found to be varied and often complex. These relations can not be given in detail, but the following classification of them is fairly inclusive:

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[1] Children same as "b" in other group.

[2] Ages 4 and 7 years at onset of first symptoms.

A. Case relation in the family (in the same house).	
Having 1 case at time of visit	61
Having 2 cases at time of visit	8
Having 3 cases at time of visit	3
Having 4 cases at time of visit	1
B. Miscellaneous relations, including case relations in the family and others.	
(a) No known relation to another case of pellagra	17
(b) Previous to onset having had temporary association with a pellagrin	9
(c) Onset while living in the immediate vicinity of a pellagrin	37
(d) Onset while living in a house with a pellagrin [1]	17
(e) Onset while living in a house previously occupied by a pellagrin of another family	3
Total	83

CONSIDERATION OF WHOLE SERIES.

Incidence, etc.—I was unable to determine with any degree of accuracy the dates at which pellagra made its appearance in these vicinities. The earliest case in Spartanburg County now recalled by the physicians whom I saw seems to have been in the person of a white female living at Enoree on the Enoree River in 1893. The disease was not recognized at this time, but physicians who saw the case are now convinced that it was pellagra. A case is reported to have occurred at Cherokee Springs along a tributary of the Pacolet River in 1891, but I was unable to see the physician who had charge of the case. Physicians now recall having seen cases in other parts of the county before the time of the recognition of the disease and are now confident that they were seeing unrecognized pellagra. In 1904 two females died in Chester County of a disease which was diagnosed as pellagra at the time by Dr. H. E. McConnell, but no report of this observation was made. As far as I was able to determine the first published diagnosis of pellagra in the vicinity of Rock Hill, York County, was made in the spring of 1908. However, unrecognized cases had occurred there before that time. Numerous new cases have appeared from time to time in each one of these counties since the existence of pellagra was recognized there, and apparently each successive year has furnished a larger number of new cases than the year preceding.

The date of onset of the first symptoms of the disease was ascertained in each one of the 83 cases personally visited and in 165 of the cases reported to me. These cases are grouped below with reference to the date of onset:

Date of onset.	Cases visited.	Cases reported.
	Number.	*Number.*
1911	38	78
1910	26	44
1909	5	16
1908	6	6
1907	3	6
1906	1	4
1905	2	3
1904	0	4
1903	0	4
1902	1	0
"Many years ago"	1	....
Total	83	165

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[1] Included in group "A" above.

Mortality and insanity rates.—As has been said, the series of 380 cases includes 89 deaths from pellagra. This gives a mortality rate of 23.8 per cent for the series. A number of the cases visited showed at the time, or gave a history of, some slight mental symptoms, as depression, etc. One of this number was insane and has since been committed to the State hospital for the insane at Columbia. Of the whole series 18 had become insane after the onset of the pellagrous symptoms, which gives a rate of 4.8 per cent for the incidence of insanity among the pellagrins in this series of 380 cases. Practically all of these 18 insane cases had been confined, at least for a time, in the State hospital for the insane. Some of these have remained there, while others have returned to their homes much improved.

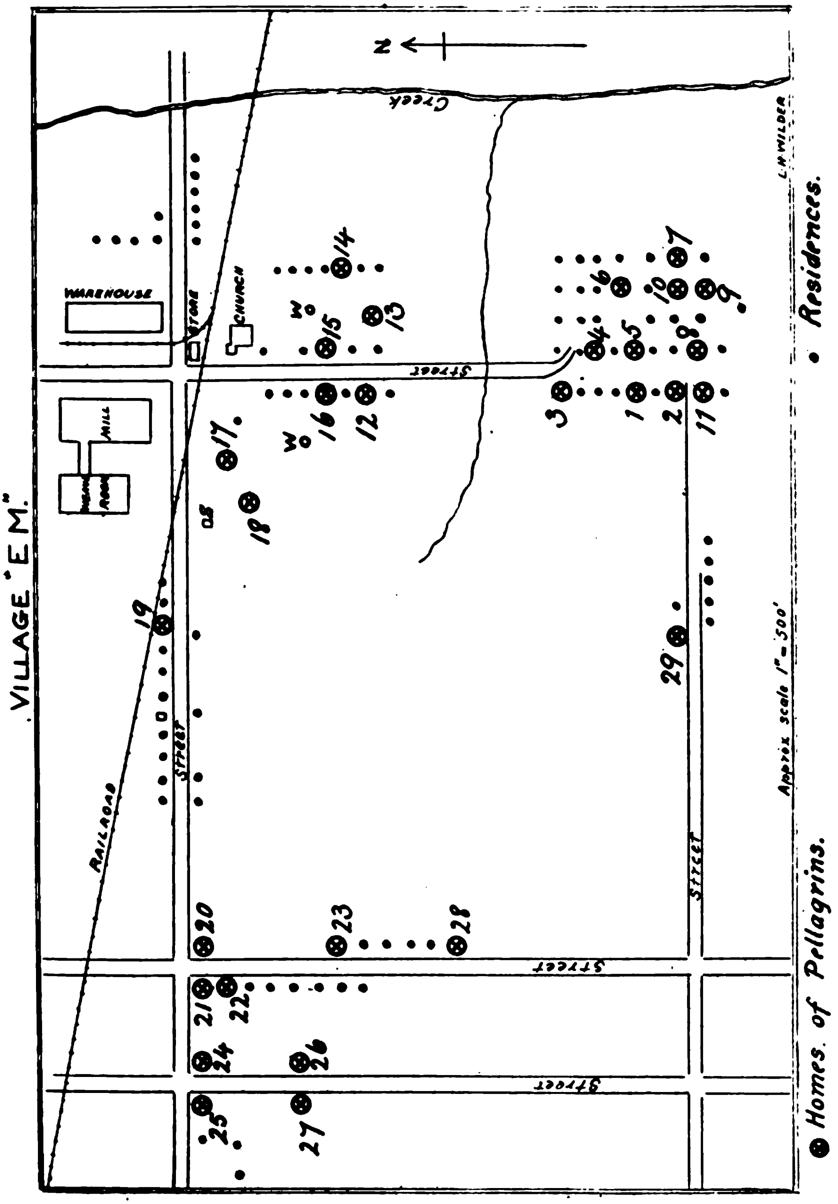
CONSIDERATION OF VILLAGE "EM."

One little cotton-mill village in Chester County proved to be of special interest. This was largely due to the fact that the pellagra situation there had been followed from its beginning up to the present time (October, 1911), and all of the cases developing there had been seen by one physician, Dr. H. E. McConnell, of Chester, S. C. About 25 cases of pellagra are known to have developed while living in this village, some of whom are still residing there, while others have moved away or have died.

A rough map of this village, designated "Village EM," is given here. The eastern half of the map represents the cotton-mill village proper and the western half a part of the suburbs of a neighboring town. The population of the area represented in the map is approximately 500, but of this number some are moving in or moving out all the time. The dots in the map are intended to show the locations of residences and the crosses with a circle around them are intended to represent the location of homes of pellagrins. The two groups of houses south of the mill are each situated on a slight elevation. A small stream flows between these two elevations and into a creek about 300 yards distant. I was told that no case of pellagra had been known to develop in the little group of houses represented in the northeast corner of the map.

The homes of the pellagrins have been numbered for the sake of reference. Some notes are given below which refer to houses with corresponding numbers:

1. Case 250, developed pellagra here in 1904. Died.
   Case 257, of a different family, developed pellagra here in 1911.
2. Case 249 developed pellagra here in 1904. Died.
3. Cases 227 and 228 (brothers) developed pellagra here in 1909.
   Case 254 developed pellagra here in 1911.
4. Case 205 developed pellagra here in 1909.
5. Case 253 developed pellagra here in 1909.
6. Case 252 developed pellagra here in 1910.
7. Case 251 developed pellagra here in 1910.
8. Case 251 lived here after onset of disease.
9. Case 214 developed pellagra here in 1911.
10. Case 214 lived here after onset of disease.
11. Case 225 developed pellagra here in 1911.
12. Case 204 developed pellagra here in 1910.
13. Case 255 developed pellagra here in 1910.
14. Case 231 developed pellagra here in 1910.
15. Case 256 developed pellagra here in 1910.
16. Case 203 developed pellagra here in 1911.


VILLAGE "E M."
N
Creek
L.H. WILDER
WAREHOUSE
STORE
CHURCH
MILL
RAILROAD
Street
Street
Street
Street
Street
W
W
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
Approx. scale 1" = 500'
● Residences.
⊗ Homes of Pellagrins.

17. Case 207 developed pellagra here in 1910.
18. Case 223 developed pellagra here in 1911.
19. Case 206 developed pellagra here in 1911. New House.
20. Case 281 developed pellagra here in 1906.
21. Case 278 developed pellagra here in 1910.
22. Case 278 now living here.
23. Case 241 lived here in 1907.
24. Case 233 developed pellagra here in 1910.
25. Case 232 developed pellagra here in 1910.
26. Case 277 developed pellagra here in 1907.
27. Case 277 now living here.
28. Case 235 developed pellagra here in 1911. Died.
29. Case 211 died of pellagra here in 1911.

I am greatly indebted to Dr. H. E. McConnell for his kindness and assistance rendered in locating cases of pellagra and in obtaining facts of the histories of the houses noted above. Much of the data was given to me by Dr. McConnell himself.

Mosquitoes are prevalent in this village, and screened houses are the exception. A number of the pellagrins here stated to me that bedbugs were present in their homes, but no specimens were collected. The water supply is obtained from driven wells located at various places throughout the village. Much of the food used by these people is obtained from the store located near the railroad switch, but other stores are also patronized.

It may be of interest to state here that Mr. W. V. King, of the Bureau of Entomology, United States Department of Agriculture, stated to me that he had collected specimens of the larva of the fly *Simulium* from the water of the little creek to the east of the village.

In conclusion, I wish to thank the many physicians of Spartanburg, Chester, and Rock Hill who, by their kindness and cooperation in this work, greatly assisted me in collecting the data which has made this report possible.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BOISE CITY, IDAHO.

COMMUNICABLE DISEASES—REPORTS OF CASES, DISINFECTION OF PREMISES.

SECTION 1. That section 12 of ordinance No. 746 of the revised ordinances of Boise City, County of Ada, State of Idaho, be, and the same is hereby, amended to read as follows:

SEC. 2. It shall be unlawful for any physician, Christian Science healer, Divine healer, faith cure, osteopath, chirpracter (sic), or any person or persons whatever, who profess to cure diseases by whatsoever means or method, or who has charge of or professionally prescribes for any person sick, injured, or diseased, regardless of whatsoever name or title he or she may assume, and any and all persons who have knowledge of any person sick, suffering, or afflicted with any contagious disease, to fail or refuse to report the same, in writing, within 10 hours of the existence of such disease, and the name of the person afflicted therewith, as soon as he or she shall become cognizant of the fact, to the health officer of the said Boise City, County of Ada, State of Idaho.

SEC. 3. The diseases hereinafter designated shall be for all intents and purposes of this ordinance considered contagious and infectious, to wit:

Cholera, scarlet fever, cerebrospinal meningitis, chicken pox, membranous croup, whooping cough, typhus fever, typhoid fever, diphtheria, yellow fever, smallpox, measles, bubonic plague, tuberculosis, and infantile paralysis.

SEC. 4. Every person who finds a patient or patients showing symptoms as to indicate that such patient or patients may have any of the aforesaid diseases, as mentioned in section 3 of this ordinance, or in case there is no attending physician or nurse caring for such patient or patients, the head of the household or proprietor of any hotel, lodging house, hospital, or sanitarium shall report the same to the health officer of the said city, as hereinbefore designated, and any person or persons failing so to do shall be punished as hereinafter provided.

SEC. 5. Any person violating or failing to comply with the provisions of this ordinance shall be deemed guilty of misdemeanor, and upon conviction thereof shall be fined a sum not to exceed $100, or by imprisonment in the city jail not to exceed 30 days, or by both such fine and imprisonment.

SEC. 6. That section 28 of ordinance No. 746 of the revised ordinances of Boise City, County of Ada, State of Idaho, shall be, and the same is hereby, amended to read as follows:

SEC. 7. Upon the death or convalescence of any person or persons suffering from or afflicted with any of the contagious or infectious diseases named in section 12 of this ordinance, the health officer shall at once cause the premises, room or rooms, house or houses where said persons or person may be found, together with the contents thereof, to be thoroughly disinfected, cleaned, fumigated, or dealt with in a manner within the discretion of said health officer whenever he may deem necessary, in order to prevent the further spread or infection of said disease or diseases, and in extreme cases he shall have authority to destroy the contents of aforesaid premises.

SEC. 8. Fumigating or otherwise cleaning of any premises aforesaid shall be done at the expense of the owner, lessee, tenant, or occupant of said premises, room or rooms, house or houses, and no quarantine shall be raised until after the expense incurred for such fumigating shall have been paid; and in the event that any person shall be unable to pay for such fumigating, then the same shall be paid by the said Boise City out of the general fund of said city.

SEC. 9. This ordinance shall take effect and be in force immediately after its passage and approval.

SEC. 10. Hereby repealing all ordinances and parts of ordinances in conflict herewith. [Ordinance No. 959, adopted Sept. 1, 1911, amending secs. 12 and 28 of ordinance No. 746, adopted June 11, 1907.]

BROOKLINE, MASS.

GARBAGE AND REFUSE—CARE AND DISPOSAL.

Art. III. *Waste Material—Garbage.*

SECTION 1. All waste material set out for removal by the town shall be kept in separate receptacles.

SEC. 2. One or more of such receptacles shall be used exclusively for garbage or swill and shall be water-tight, have tight-fitting covers, and be kept clean and free from deposits of garbage. (An underground garbage receptacle is urgently recommended.)

SEC. 3. A second receptacle or receptacles, preferably made of iron, shall be used exclusively for ashes, tin cans, bottles, and other incombustible waste.

SEC. 4. A third separate set of receptacles shall be used exclusively for dry combustible waste, such as paper, old shoes, house sweepings, and such other waste material as it is customary for the town to remove.

SEC. 5. No person shall overhaul the contents of receptacles for waste material set upon the sidewalks to be removed by the town.

SEC. 6. No person shall throw upon the sidewalk, or into any public street or catch-basin, any paper, tin can, house sweepings, lawn rakings, old shoes, orange peel, banana skin, dead animal, or other waste material. [Ordinance board of health, adopted Nov. 6, 1911.]

LAWRENCE, MASS.

BREAD—EACH LOAF TO BE WRAPPED.

REGULATION 85. All bread offered or intended for sale shall be suitably wrapped, each loaf separately, in parafin paper in such manner as to completely protect the bread from dust and dirt. [Regulation board of health, adopted July 1, 1911.]

MORRISTOWN, N. J.

KEEPING OF DOMESTIC ANIMALS—CHICKENS, FOWLS, AND POULTRY.

No person, firm, or corporation shall hereafter keep or maintain any poultry, fowls, or chickens in houses, pens, coops, or runs within a distance of 30 feet from any dwelling house, nor within 12 feet of any street fence line without a written permit from the board of health, and all chicken houses, pens, coops, and runs must be kept in a sanitary condition. Any person, firm, or corporation violating this ordinance, shall, on conviction thereof, pay a fine or penalty of not less than $10 for each offense: *Provided, however,* That this ordinance shall not apply to, nor be enforceable against, any person, firm, or corporation engaged in the business of the buying and selling of poultry, fowls, and chickens in the regular course of trade. [Ordinance board of health, adopted Dec. 11, 1911.]

PIQUA, OHIO.

PRIVIES AND CESSPOOLS, CLEANING OF, AND REMOVAL OF NIGHT SOIL—STABLES AND MANURE, CARE AND DISPOSAL OF.

SECTION 1. That it shall be unlawful for any person or persons to remove and haul in and through said city any night soil, contents of privy vaults, cesspools, and sinks, and other offensive matter, except in carts or wagons the beds of which are water-tight, or in water-tight barrels, such carts, wagons, or barrels to be provided with air-tight lids, covers, or valves which will prevent the escape of offensive odors therefrom, and all such lids, tops, covers, or valves shall be shut and securely fastened when any of the matter aforesaid is being removed or hauled in such carts, wagons, or barrels, and all such wagons, carts, or barrels shall be kept thoroughly cleansed and disinfected and shall not be used when otherwise.

SEC. 2. That all privy vaults after being emptied, also all night soil and the contents of sinks, privies, vaults, and cesspools and all noxious substances, shall, before removal or exposure, be disinfected and rendered inoffensive by the person or persons removing the same.

SEC. 3. That no persons shall empty nor attempt to empty any vault, sink, or cesspool in the city of Piqua, except in pursuance to a permit therefor first received from the health officer of said city.

SEC. 4. That no privy vault, closet, or cesspool shall be hereafter constructed or permitted to remain on any premises accessible to a public sewer, except when properly connected with the sewer. In cases where such privy vault, closet, or cesspool now exists the same shall be discontinued as soon as they become filled or foul so that cleaning is necessary.

SEC. 5. That the owner, lessee, tenant, and occupant of any stable, stall, or apartment or barn or poultry yard in which any horse, cattle, or any other animal or fowl shall be kept, or any place in which manure or any liquid discharge of such animals or fowls shall collect or accumulate, shall cause said manure and liquid discharge to be placed and kept in closed bins securely covered at all times to protect it from flies as much as practicable, and said manure and liquid discharge shall be hauled away at least once a month during the interval between the 1st day of April and the 1st day of December, or at such more frequent intervals as the health officer shall order or direct, and all such stables, stalls, and apartments, drains, yards, and appurtenances thereof shall at all times be kept in a cleanly and sanitary condition, and no offensive smell shall be allowed to escape therefrom.

SEC. 6. That any person or persons violating any of the provisions of this ordinance shall, upon conviction thereof, be fined in any sum not more than $50 and costs of prosecution.

SEC. 7. This ordinance shall take effect and be if force from and after the earliest period allowed by law. [Ordinance adopted July 3, 1911.]

TACOMA, WASH.

MILK—PRODUCTION, CARE, AND SALE.

SECTION 1. It shall be unlawful for any person to sell, exchange, or deliver, offer or expose for sale, or have in his possession with intent to sell or deliver, within the city of Tacoma—

(1) Any unwholesome milk or cream; or

(2) Any milk containing less than 8.75 per cent of milk solids, exclusive of fat, or less than 3.25 per cent of fat, except in the manner and under the conditions prescribed for the sale of skimmed milk; or

(3) Any skimmed milk except under the name of "skimmed milk" and in cans or other receptacles plainly stamped or marked in some conspicuous place with the words "Skimmed milk"; and every person who shall sell or serve, or keep for sale or for the purpose of serving in any hotel, restaurant, or boarding house, any skimmed milk, shall display in a conspicuous place in the room where the same is sold or served, a placard bearing the words in large letters "Skimmed milk sold here"; or

(4) Any cream containing less than 18 per cent of fat.

SEC. 2. Milk or cream shall be deemed to be unwholesome in the following cases:

(1) When any foreign substance has been added thereto or placed therein for the purpose of thickening, coloring, or preserving the same; or

(2) When it contains any pathogenic bacteria or germs, pus cells, or blood cells; or

(3) When it contains more than 200,000 bacteria or germs of all kinds to the cubic centimeter; or

(4) When any water has been added thereto; or

(5) When any part of it has been drawn from a cow fed on refuse or unwholesome food; or

(6) When any part of it has been drawn from an unhealthy or dirty cow, or cow kept in an unclean shed, or has been milked by unclean milkers; or

(7) When any part of it has been contaminated; or

(8) When any part of it has been exposed to any contagious or infectious disease; or

(9) When any part of it has been drawn from a cow within 10 days before or 5 days after parturition, or in any case before such cow is free from fever.

SEC. 3. Skimmed milk is hereby defined to be any wholesome milk from which the cream has been removed or which contains less than 3.25 per cent of butter fat.

SEC. 4. It shall be unlawful to keep or maintain a dairy within the city of Tacoma. The maintenance of a dairy is hereby defined to be the keeping of more than two cows and selling the whole or any part of the milk therefrom.

SEC. 5. It shall be unlawful for any person to sell or deliver, offer or expose for sale, or have in his possession with intent to sell or deliver, any milk or cream in the city of Tacoma without having a permit so to do duly issued by the health officer of said city, or without having such permit displayed in a conspicuous manner in his place of business, or without having the number of such permit and the name of the owner thereof printed in a conspicuous manner on both sides of every wagon or other vehicle used for the sale or delivery of milk or cream. Application for a permit shall be made in writing and upon blanks provided by said health officer for that purpose, on which shall be stated the name of the applicant, the location of his place or places of business, the number of cows, if any, owned or controlled by such applicant, the location of any dairy or dairies other than his own from which he secures or proposes to sell milk, the number and description of all wagons or other vehicles to be used by the applicant in his business; and no permit shall be granted to said applicant by said health officer until the city milk inspector shall have inspected the cows owned or controlled by the applicant, and the cows of all other persons, if any, from whom he obtains or intends to obtain milk or cream; the stables or barns in which such cows are kept, the food upon which such cows are fed, and their water supply and the apparatus used or to be used by said applicant in caring for, gathering and distributing milk or cream, and shall have certified to said health officer that said cows are in healthy condition, apparently free from disease, and that the stables or barns in which such cows are kept, the appliances used or to be used in caring for, gathering, or distributing milk or cream are in a clean and sanitary condition, and that the food upon which said cows are fed is clean and wholesome.

If, after the issuance of any permit, the applicant shall change the location of his place of business, notice thereof shall be given forthwith to the health officer.

Such permit shall be issued without cost and shall remain in force for a period of one year.

In case additions are made from time to time to the herd of cows belonging to the holder of any permit, or to any of the herds of cows from which he obtains milk, it shall be his duty at such time to immediately report such fact to the health officer, in order that such cows may be inspected.

Sec. 6. It shall be unlawful for any person to sell milk or cream, or offer it for sale in any booth, stand, store, or market place in the city of Tacoma without first registering his name and place of business in the book kept by the inspector of milk of said city for that purpose.

Sec. 7. It shall be unlawful for any retail or wholesale dealer in milk in the city of Tacoma to sell, offer, or expose for sale any milk or cream unless the same shall have been procured by him from a dairy or dairies which have been duly inspected and have complied with the provisions of this ordinance.

Sec. 8. It shall be unlawful for any person to ship or bring into the city of Tacoma for the purpose of selling or offering for sale, or sell or offer for sale therein, for human food, any milk or cream unless the cans, vessels, and receptacles used in handling the same, and all packages, refrigerators, compartments, or other places where such milk or cream is kept, stored, or handled, shall be kept and maintained clean and neat and free from the presence of any article or thing of any kind likely to contaminate or injure the quality or sweetness of such milk or cream, and unless the cans or other receptacles in which such milk or cream is kept shall be used for such purposes only, and shall be thoroughly sterilized with boiling water or live steam each time they are used; and unless all pouring cans, dippers, or other vessels used in handling or delivering such milk shall be scalded and sterilized daily. All bottles in which milk or cream is distributed shall be washed clean and sterilized immediately before they are used and sealed immediately after they are filled.

Sec. 9. All milk brought or shipped into the city of Tacoma to be sold for human food shall immediately after being drawn from the cow be aerated and cooled to a temperature of not to exceed 60° F., and until such milk or the cream therefrom is delivered to the consumer it shall be kept at a temperature not to exceed that above specified.

Sec. 10. It shall be unlawful for any person to sell milk or cream at retail in the city of Tacoma on and after the 1st day of February, 1912, in any manner whatsoever except in glass bottles or other receptacles securely sealed, which milk or cream shall be bottled or placed in said receptacles at the dairy where it is produced, or at a milk depot, storeroom, or other place kept exclusively for the purpose of storing and handling milk and maintained in a cleanly and sanitary condition. In no case shall milk or cream be bottled in the wagon or vehicle in which it is being conveyed or from which it is being distributed: *Provided, however,* That this section is not intended to prohibit restaurants, hotels, or boarding houses from serving milk or cream to guests in any other manner.

The sale of milk or cream at retail is hereby defined to be the sale of milk or cream in quantities of 1 gallon or less.

Sec. 11. It shall be the duty of the milk inspector to inspect from time to time all dairies selling or supplying milk for sale in the city of Tacoma. He shall inspect the cows, the stables, drainage, ventilation, food, water, yards, pasture, methods of milking, and all matters connected with the care and management of such dairies. He shall inspect all places and vehicles in or from which milk or cream is sold, offered or exposed for sale, kept, stored, delivered or disposed of, including restaurants, hotels, and boarding houses, and all vessels, cans, receptacles, refrigerators, compartments of any store, building, or other place used in storing, handling, delivering, or disposing of milk or cream in the city of Tacoma, to ascertain whether the provisions of this ordinance are being complied with, and report to the board of health any violation thereof. In order to make such inspection he shall have the right to enter and shall have free access to any building, establishment, vehicle, or place where such milk is produced, being transported, stored, kept, or offered for sale, and he shall have the right to take samples of milk or cream therefrom in quantities not to exceed 1 quart each for the purpose of inspecting, testing, or analyzing the same.

Sec. 12. Nothing in this ordinance shall be so construed as to prohibit the sale of what is commonly known as buttermilk, provided the same is produced from pure, healthful, wholesome, and uninfected milk.

Sec. 13. The word "person" wherever used in this ordinance shall be held and construed to mean any person, firm, or corporation, and the act of an agent or servant shall be deemed to be the act of the principal or employer.

Sec. 14. Any person violating any of the provisions of this ordinance shall, upon conviction, be fined in any sum not exceeding $100 or imprisoned in the city jail for a period not exceeding 30 days.

Sec. 15. All ordinances and parts of ordinances in conflict herewith are hereby repealed. [Ordinance adopted Jan. 3, 1912.]

REPORTS TO THE SURGEON GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

CEREBROSPINAL MENINGITIS IN TEXAS.

A report by Passed Asst. Surg. R. H. von Ezdorf.

Referring to bureau telegram dated January 16, 1912, directing me to proceed immediately to Dallas, Tex., by way of Austin, and to confer with the State health authorities relative to the prevalence of cerebrospinal meningitis, I have the honor to make the following report:

DALLAS.

The cases reported in Dallas up to January 22, 1912, were as follows:

	Cases.	Deaths.
October, 1911	1	1
November, 1911	9	6
December, 1911	73	45
Jan. 1 to 22, 1912	156	55
Total	239	107

According to color and sex, these cases were distributed as follows:

	Cases.	Deaths.
White male	107	58
White female	65	22
Colored male	37	13
Colored female	30	14

Classed according to ages, they were:

Less than 1 year	12
1 to 4 years	30
5 to 9 years	41
10 to 14 years	14
15 to 19 years	27
20 to 29 years	40
30 to 39 years	23
40 to 49 years	26
50 years and over	15
No age given	11
Total cases	239

The cases were widely scattered and occurred in all parts of the city. In 10 or 12 families more than 1 case had occurred.

A visit was made to the city hospital of Dallas, which since January 7, 1912, had been used exclusively for the treatment of cerebrospinal meningitis cases, under the direction of Dr. Abraham Sophian of the Research Laboratory of New York City, and Dr. A. W. Nash, the health officer of Dallas.

The use of the specific serum by injection directly into the subarachnoidal space, after first removing part of the cerebrospinal fluid, was the treatment used. The hospital was opened January 7 and up to January 22 there had been 106 admissions, which included some cases admitted from the county. There had been 31 deaths among these cases, and 75 cases were still in the hospital. Of these a number were convalescent. The mortality following the serum treatment was reported to be about 10 per cent, while the general mortality in the hospital was higher. This was explained as due to the admission of a number of cases in a moribund state.

The spinal fluid which was obtained from all the cases was sent to Dr. A. E. Thayer, professor of pathology and bacteriology, Baylor University, School of Medicine and Pharmacy, for examination, and in all the meningococcus was found.

Since January 13, 1912, examinations for carriers have been made of persons who were known to have come in contact with cases of the disease—that is, of families among whom cases developed.

The method of making these examinations was as follows: Smears were obtained by use of swabs taken from the nose and throat, and the swabs used for the inoculation of culture tubes of sheep's serum broth. This work was done by a corps of 5 fourth-year medical students who had been instructed regarding the technique of obtaining the specimens. Each student was furnished with a bag containing the following:

1 dozen slides.
1 dozen sterile swabs in tubes.
1 flask sheep's serum glucose broth.
1 flask alcohol.
1 alcohol lamp.
1 dozen Petri dishes with adhesive strap.
1 notebook.

The microscopic examinations were made by Dr. A. E. Thayer. Smears found to show numerous diplococci having the morphological appearance of the meningococcus and differentiated from the micrococcus catarrhalis by staining with Loeffler's methylene blue, were rated as positive. These findings were checked with the cultures obtained on the following day.

The results of smear examinations for the period January 13, 1912, to 5 p. m. January 26, 1912, were as follows:

On first examination.

Nose and throat both positive	152
Nose or throat one positive	99
Nose and throat both negative	170
Total	421

This shows an examination of 421 persons, among whom 59.6 per cent were reported to be positive healthy carriers on the first examination.

The results obtained from cultures showed 53.75 per cent of the first examinations to be positive instead of 59.6 per cent as recorded by smear examinations.

The total number of smear examinations made was 635, which includes reexaminations a second, third, and fourth time. The results obtained give 205 positive for nose and throat, 145 positive for nose or throat, and 285 negative; that is, 55 per cent positive findings.

In consideration of the fact that an epidemic prevailed and that diplococci as well as the *micrococcus catarrhalis* were to be found so prevalent among contacts, in the smears alone, it was accepted as a public health policy to consider those persons, from whom these findings were reported, to be carriers until proven otherwise on culture examinations.

House quarantine was practiced and all contacts were required to remain in their homes, the houses being placarded. Release from quarantine was made dependent upon a negative microscopic finding of swab examinations from the nose and throat of all inmates, and so long as there was a positive finding the observation continued. The house quarantine was carried out on the honor system, except in a few instances, where guards were placed during the daytime only.

A sanitary campaign of cleaning up was also started. A board of diagnosis, consisting of 4 physicians, was appointed.

FORT WORTH, TEX.

There had been reported the following number of cases:

	Cases.	Deaths.
December, 1911	4	3
Jan. 1 to 24, 1912	57	23
Total	61	27

These cases occurred mainly in the insanitary sections of the city. As many as could be induced to enter the college hospital were treated there.

It was learned that the public schools had not been closed during the month, and that with 11,000 pupils attending only 3 had developed the disease, and that only 1 of the 3 was a regular attendant.

In one family only had 2 cases occurred, and these developed 12 days apart. Serum for the treatment for all cases was furnished by the mayor's office to the physicians reporting cases.

Microscopic examinations of the spinal fluids obtained from patients, for the confirmation of the diagnosis, were being made.

A circular letter had been printed for distribution to the public and to all school children. This circular reads as follows:

INFORMATION REGARDING PREVENTION OF MENINGITIS.

(Furnished by the city advisory committee of five physicians and City Physician W. M. Trimble.)

1. Use by everyone of any good antiseptic, sprayed thoroughly into nose and throat from an atomizer, not less than three times daily.
2. Thorough cleaning of the house and premises and careful attention to personal cleanliness.
3. Remain at home as much as possible, avoid mingling with crowds and promiscuous visiting among friends and relatives.

4. Dress to meet changes in the weather and pay strict attention to maintaining the highest standard of health.

This germ is one of the most easily killed of any known and with the cooperation of the public can be quickly stamped out.

WACO, TEX.

The report of cases at Waco was as follows:

	Cases.	Deaths.
December, 1911	51	20
Jan. 1 to 26, 1912	68	24
Total	119	44

Tabulated according to color and sex, these cases occurred as follows:

	Cases.	Deaths.
White male	47	19
White female	37	11
Colored male	21	9
Colored female	14	5

There were 4 families in which 2 cases of the disease occurred in each. So far as practicable, cases were removed to the Provident Sanitarium.

The city authorities were having a building, which had formerly been used as a hospital, renovated for the occupancy and treatment of cerebrospinal meningitis cases only.

An inspection of places where cases of the disease were reported was also made. Upon the removal of a case to the hospital the house was disinfected with formaldehyde and the family released from further observation.

At a special meeting of the board of health there were adopted measures relating to the detection and quarantine of carriers found among direct contacts, and requiring that no convalescent be discharged until proved not to be a carrier of the organisms in nose or throat secretions.

HOUSTON, TEX.

Upon the request of the governor and State health officer, an inspection was made of the convict farm, about 20 miles from Houston, where a case of the disease had occurred in the family of the physician of the camp. The infection in this case was traced outside of the camp.

At Houston there had been reported between January 1 and 29, 1912, inclusive, 26 cases of cerebrospinal meningitis, with 9 deaths.

Detailed according to color and sex, these occurred as follows:

	Cases.	Deaths.
White males	9	2
White females	3	1
Colored males	11	6
Colored females	3	....
Total	26	9

Isolation of patients in the isolation hospital was done as far as practicable. House quarantine by placarding was practiced. No contact or convalescent had been released from quarantine, and such release I was informed would only be made on the negative bacteriological examination of the nose and throat secretions of such persons.

GENERAL.

The reports received to January 27, 1912, by the State health officer showed that there had been 550 cases with 210 deaths reported in 49 different localities in Texas. The chief places where the disease prevailed were Dallas, Fort Worth, Waco, and Houston.

It is remarkable that San Antonio, one of the large cities in Texas, has had no cases reported up to this time, January 25.

At Rockwall, 10 cases with 5 deaths were reported, among which 5 cases and 2 deaths occurred in one family.

The State health officer issued the following circular dated January 8, 1912, to all health officers in the State:

Dear Doctor: Isolate and place in absolute quarantine all cases cerebrospinal meningitis.

On appearance of the disease in your city close public schools and discourage public gatherings.

Insist upon general sanitary measures, clean and disinfect sidewalks, streets, and alleys.

Carriers convey the disease by means of the nose and throat secretions.

Insist upon the enforcement of the antispitting ordinance and advise the use of an antiseptic spray in the nose and throat, as a precautionary measure.

See that all street cars and public conveyances are disinfected.

Yours truly,

Ralph Steiner, *State Health Officer.*

Another circular letter was issued January 23, 1912, as follows:

Dear Doctor: It is doubtful whether a definite quarantine period is sufficient to control the spread of meningitis, as it is known that carriers may carry the meningococcus in their nasal and throat secretions for a period of several weeks. To prevent the spread of the disease in this manner a bacteriological examination of these secretions from all convalescent meningitis patients or persons directly exposed to the disease must be made 10 days after the subsidence of the disease. We have made arrangements for such examinations and request you to assist us. Whether you will continue quarantine will depend in each case upon our findings.

The following is a description of the technique of preparing specimens for examination and instructions which you are to follow:

1. By means of cotton-tipped probes the secretions from the upper portion of each nasal cavity and from the region of the fauces are collected.
2. The secretions are smeared upon a clean glass-cover slip or slide, such as is used in ordinary microscopical work.
3. Two smears are made from each nasal cavity and two from the throat, making a total of six smears to be made.
4. Label each smear, indicating whether taken from nose or throat.
5. Give name, address, age, sex, color, and occupation of each person from whom the smears were taken, and also state whether a convalescent or merely one exposed to meningitis.
6. Send specimens and information requested to State bacteriologist, Austin, Tex

Yours, truly,

State Health Officer.
State Bacteriologist.

SUMMARY.

The history of the present epidemic for 1911–12 begins with the cases reported in Dallas with 1 case in October and 9 cases in November, increasing in December and January, and averaging in January about 7 new cases a day.

In Waco the first 9 cases were reported on December 20, after which cases were reported for the remainder of the month on the average of about 5 new cases a day; for January the report of new cases averaged 3 each day.

In Fort Worth the 4 cases reported for December occurred between December 20 and 31, 1911, and the average report of new cases in January, 1912, was about 3 a day.

In Houston the first case was reported January 1, and the average number of new cases was about 1 a day.

A few cases were reported during the latter part of January in Galveston. In other points in Texas cases of the disease were reported in January, San Antonio being the only large city apparently free from the disease.

It was reported that the weather conditions for the northern part of the State had been unusual. During the past three years a drought had occurred so that drinking water had to be shipped into Dallas.

The present winter season was unusual, in that for six weeks, between December and January, continuous rains had occurred, and severe cold weather also prevailed.

It was also reported that an epizootic of "blind staggers" had prevailed among horses about the time this epidemic started.

The occurrence of more than one case in a family has been comparatively rare.

The disease prevailed chiefly among the poorer classes living under insanitary conditions, but others were also affected.

The disease affected males more than females, and the mortality was slightly less among the females.

The extremes in ages were 8 weeks and 80 years.

From the statistics of 302 cases in which the ages were given, 55 occurred in children less than 5 years; 54 between 5 and 10 years; 24 between 10 and 15 years; 44 between 15 and 20 years; 54 between 20 and 30 years; 25 between 30 and 40 years; 27 between 40 and 50 years; and 19 for persons over 50 years of age.

This gives a total of 177 cases, or 58.6 per cent, occurring in persons less than 20 years of age; and 125, or 41.4 per cent, of the cases in those over 20 years of age.

The people in the infected cities seemed to be in perfect accord with the city health authorities in their endeavors to control the spread of infection.

The following measures were found practical of enforcement:

1. Placarding and quarantining of a house.
2. Establishment of an isolation hospital for the care, and treatment with specific serum, of cerebrospinal meningitis cases only.
3. For detecting carriers: Bacteriological examinations of nose and throat secretions of all persons quarantined in houses where cases occurred.
4. Medical inspection service and board of diagnosis.
5. Distribution of circulars advising—

(*a*) Use of an antiseptic spray for nose and throat.

(*b*) Careful attention to personal hygiene, mainly cleanliness; avoid chilling of body, and maintain good health.

(*c*) Avoidance of public gatherings and close contact with persons.

(*d*) Cleaning of premises, and free ventilation of houses.

(*e*) That the disease is infectious, and that healthy persons may innocently transmit it to others by disseminating germs, which may be in their nose and throat, by coughing, sneezing, kissing, etc.

(*f*) That the disease is not carried by clothing, merchandise, food, etc.

It was impossible to trace the source of infection from one case to another; nor was it practicable to determine what factor was necessary in causing the development of the disease in one person and not in another known to be intimately in contact with the disease.

There were a number of towns throughout Texas which quarantined places where the disease had made its appearance. As this was impracticable and gave a false sense of security, owing to the widespread infection and large number of healthy carriers, it was advised that quarantine was ineffective and simply interfered with commerce.

Cases and deaths reported to Jan. 24, 1912.

Towns.	Cases.	Deaths.	Towns.	Cases.	Deaths.
Austin	5	2	Industry	1	
Beeville	1		Karnes County	5	
Bonham	1		Ladonia	Present.	
Breckenridge	1	1	Lockhart	2	1
Brownwood	4	1	Kirbyville	1	
Brenham	2	1	Marlin	1	
Columbus	1		Mart	1	
Cooper	1		Mexia	2	
Crockett	1		Midland	3	2
Cuero	1		Mineola	2	
Canyon	1	1	Palestine	1	
Clarkesville	12	Several.	Plano	1	
Dallas	249	110	Rockwall	10	5
Dallas County	6		Saltillo	Epidemic.	
Decatur	1		Sandia	1	
Dublin	1		Sherman	3	
Emory	11	9	Smithville	3	1
Fairfield	4		Shiner	1	
Forney	1	1	Somerville	3	
Fort Worth	61	27	St. Hedwig	1	
Georgetown (county of Williamson)	4	1	Teague	1	1
Gatesville	2	1	Thurber	2	
Henrietta	1		Tyler	4	2
Hereford	3		Waco	118	43
Houston	8		Total	550	210

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,266 acres of land in Alameda County were covered with poison during the week ended February 3, 1912.

During the same period 6,100 acres of land in San Joaquin County and 3,200 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Feb. 3, 1912	2	[1] 157	74	
Oakland	do	6	[2] 683	544	
San Francisco	do	8	[3] 1,464	1,138	
Counties—					
San Joaquin	do		[4] 147	147	
Washington:					
City—					
Seattle	do		1,116	1,054	

[1] Identified: Mus norvegicus, 76; Mus rattus, 1; Mus musculus, 79; Mus alexandrinus, 1.
[2] Identified: Mus norvegicus, 553; Mus rattus, 2; Mus musculus, 127; Mus alexandrinus, 1.
[3] Identified: Mus norvegicus, 728; Mus rattus, 240; Mus musculus, 325; Mus alexandrinus, 171.
[4] Identified: Mus norvegicus, 144; Mus musculus, 1; Mus alexandrinus, 2.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

One squirrel found in Alameda County was examined. No plague infection was found.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED FEB. 23, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
*Alabama:				
Montgomery	Jan. 26-Feb. 10	4		
Florida:				
Counties—				
Baker	Feb. 4-10	1		
Columbia	do	6		
Duval	do	21		
Escambia	do	1		
Franklin	do	3		
Gadsden	do	4		
Leon	do	9		
Marion	do	1		
Orange	do	4		
Putnam	do	1		
St. Johns	do	1		
Volusia	do	1		
Total for State		53		
Kansas:				
Counties—				
Allen	Nov. 1-30	9		
Anderson	do	5		
Bourbon	do	4		
Cowley	do	12		
Doniphan	do	7		
Harvey	do	1		
Jefferson	do	1		
Jewell	do	2		
Lyon	do	1		
Shawnee	do	4	2	
Woodson	do	164		
Total for State		210	2	
Bourbon	Dec. 1-31	2		
Coffey	do	21		
Cowley	do	20		
Doniphan	do	8		
Graham	do	3		
Johnson	do	1		
Lyon	do	1		
Ness	do	2		
Reno	do	5		
Riley	do	2		
Shawnee	do	2		
Sumner	do	4		
Woodson	do	131		
Wyandotte	do	3		
Total for State		205		
*Kentucky:				
Newport	Feb. 4-10	1		
Massachusetts:				
Counties—				
Hampden	Jan. 1-31	1		
Middlesex	do	6		
Suffolk	do	4		
Total for State		11		
*Missouri:				
Kansas City	Dec. 1-31	16		
St. Louis	Feb. 4-10	1		
Total for State		17		

SMALLPOX IN THE UNITED STATES—Continued.

Reports received during week ended Feb. 23, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
North Dakota:				
Counties—				
Cass	Jan. 1-31	5		
McHenry	do	16		
Renville	do	2		
Stutsman	do	1		
Wells	do	1		
Total for State		25		
Ohio:				
Counties—				
Defiance	Jan. 1-31	1		
Franklin	do	8		
Hamilton	do	7		
Lucas	do	58		
Madison	do	5		
Morgan	do	4		
Ottawa	do	3		
Stark	do	7		
Total for State		93		
*Tennessee:				
Chattanooga	Feb. 4-10	1		
Vermont:				
Counties—				
Caledonia	Jan. 1-31	16		
Chittenden	do	2		
Essex	do	5		
Franklin	do	1		
Lamoille	do	3		
Orange	do	1		
Orleans	do	1		
Rutland	do	2		
Washington	do	1		
Total for State		32		
Virginia:				
Counties—				
Amherst	Jan. 1-31	4		
Brunswick	do	5		
Buckingham	do	1		
Carroll	do	20		
Mecklenburg	do	13		
Middlesex	do	1		
Montgomery	do	4		
Nansemond	do	25		
Norfolk	do	9		
Purcell	do	8		
Southampton	do	19		
Washington	do	5		
Total for State		114		
Washington:				
Counties—				
Asotin	Dec. 1-31	3		
Chelan	do	2		
Columbia	do	5		
King	do	2		
Pend Oreille	do	13		
Spokane	do	50		
Stevens	do	1		
Wahkiakum	do	4		
Walla Walla	do	8		
Total for State		88		
Grand total for the United States.		854	2	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

Google

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED FEB. 3, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	210	24	2	8	....	21	1	....	....	45	29	10	1
Boston, Mass	670,585	274	54	2	193	3	46	1	2	....	70	21	4	....
Chicago, Ill	2,185,283	....	117	17	39	1	160	5	2	....	116	80	16	3
Cleveland, Ohio	560,663	165	21	3	41	....	28	....	....	....	20	22	1	....
New York, N. Y	4,766,883	1,593	238	22	715	11	306	17	3	....	480	187	52	13
Philadelphia, Pa	1,549,008	494	8	72	1	15	3	47	....	....	52	92	6	26
Pittsburgh, Pa	533,905	162	24	3	6	....	16	....	....	....	46	13	3	1
St. Louis, Mo	687,029	244	26	5	12	1	25	5	5	....	41	19	4	....
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	106	15	1	5	....	10	....	....	....	10	10	2	....
Cincinnati, Ohio	364,463	134	8	....	1	....	16	....	2	....	34	20	2	....
Detroit, Mich	465,766	171	25	3	....	....	28	....	1	....	....	....	....	....
Los Angeles, Cal	319,198	113	12	....	2	....	20	....	4	....	22	23	3	....
Milwaukee, Wis	373,857	120	12	....	25	....	26	4	....	....	19	7	22	5
Newark, N. J	347,469	116	14	....	....	....	12	....	....	....	35	20	5	....
New Orleans, La	339,075	147	2	1	2	....	14	....	2	....	31	20	3	....
San Francisco, Cal	416,912	162	11	2	347	1	9	....	....	....	31	12	2	....
Washington, D. C	331,069	134	11	2	4	....	8	2	....	....	23	13	4	1
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	70	14	1	4	....	10	....	....	....	....	12	....	....
Jersey City, N. J	267,779	69	....	....	....	....	....	....	....	....	....	5	....	....
Kansas City, Mo	248,381	30	4	....	4	....	5	....	3	....	3	1	3	....
Providence, R. I	224,326	84	23	3	10	2	9	1	....	....	....	8	....	....
Seattle, Wash	237,194	48	7	2	8	....	2	....	2	....	5	3	2	2
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	36	2	....	1	....	6	....	....	....	1	1	....	....
Cambridge, Mass	104,839	....	8	4	4	....	4	....	....	....	4	3	....	....
Columbus, Ohio	181,548	64	4	....	40	....	15	....	....	....	4	4	1	....
Dayton, Ohio	116,577	35	....	....	1	....	1	....	....	....	1	3	1	1
Fall River, Mass	119,295	40	2	....	1	....	3	....	....	....	8	3	....	....
Grand Rapids, Mich	112,571	27	2	1	1	....	5	....	....	....	4	1	3	1
Lowell, Mass	106,294	29	3	....	8	....	4	....	....	....	2	2	....	....
Nashville, Tenn	110,364	50	1	....	....	1	2	....	....	....	5	10	....	....
Oakland, Cal	150,174	49	1	1	3	....	....	....	....	....	4	5	....	....
Spokane, Wash	104,402	....	2	....	16	....	2	....	9	....	1	1	1	....
Toledo, Ohio	168,497	33	6	1	27	....	11	....	....	....	2	7	1	1
Worcester, Mass	145,986	46	8	....	4	....	13	1	....	....	8	4	1	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	16	3	1	....	....	2	....	....	....	....	2	....	....
Bayonne, N. J	55,545	12	4	....	1	....	2	....	....	....	3	2	1	....
Brockton, Mass	56,878	19	....	....	64	....	2	....	....	....	3	1	....	....
Camden, N. J	94,538	....	3	1	....	....	3	....	....	....	5	....	....	....
Duluth, Minn	78,466	12	....	....	....	....	7	....	2	....	....	3	....	....
Elizabeth, N. J	73,409	42	....	....	4	....	8	3	....	....	3	3	....	....
Erie, Pa	66,525	25	4	....	....	....	2	....	....	....	6	4	2	....
Evansville, Ind	69,647	18	2	....	....	....	....	....	....	....	1	1	5	....
Fort Wayne, Ind	63,933	21	3	....	11	....	1	....	....	....	....	3	....	....
Harrisburg, Pa	64,186	25	5	....	2	....	1	....	....	....	5	4	....	....
Hartford, Conn	98,915	....	7	1	1	....	4	....	....	....	5	3	....	....
Johnstown, Pa	55,482	21	2	1	....	....	....	....	....	....	....	3	1	....
Kansas City, Kans	82,331	....	1	....	1	....	1	....	....	....	2	....	1	....
Lawrence, Mass	85,892	43	1	1	....	....	1	....	....	....	1	3	....	1
Lynn, Mass	89,336	23	2	1	26	1	5	....	....	....	7	2	2	1
Manchester, N. H	70,063	31	12	1	41	....	2	....	1	....	1	1	1	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 3, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
New Bedford, Mass	96,652	28			4		2				1		4	
Oklahoma City, Okla	64,205	10										2		
Reading, Pa	96,071	23	1		1		3				1	2	1	1
San Antonio, Tex	96,614	41	1		12		4		1			12		
Schenectady, N. Y	72,826	21	1		1		5				4	3		
South Bend, Ind	53,684	16	1				1					3	3	
Springfield, Ill	51,678	14	4				1		1			1		
Springfield, Mass	88,926	32	4	1	37	1	5				3	2		
Wichita, Kans	52,450		1		1								1	1
Wilkes-Barre, Pa	67,105	18	8		130	1					5			
Wilmington, Del	87,411	37										4		
Yonkers, N. Y	79,803	27	5	1	3		9				7	2	1	1
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	6	4				1							
Aurora, Ill	29,807	10	4	1								1		
Binghamton, N. Y	48,443	20	2								3		2	
Brookline, Mass	27,792	15					3				2			
Chelsea, Mass	32,452	15	1	1	4		5				3	1		
Chicopee, Mass	25,401	6	2	1			1							
Danville, Ill	27,871	12	1				1		1			1		
East Orange, N. J	34,371	7			5		4					3		
Elmira, N. Y	37,176	9	2	1							2	1		
Everett, Mass	33,484	10	3		5		1				1	1		
Fitchburg, Mass	37,826	11												
Haverhill, Mass	44,115	14	5	1	13		1				5	2		
Kalamazoo, Mich	39,437	20			2		2					2		
Knoxville, Tenn	36,346	20			1				15			4	1	
La Crosse, Wis	30,417	5	1	1					1			1		
Lancaster, Pa	47,227				1		1				1			
Lexington, Ky	35,099	20			6						2	1		
Lynchburg, Va	29,494	13			5		5				1			
Malden, Mass	44,404	8					5				1		1	
Montgomery, Ala	38,136	20	1		6		1		1		1		18	1
Mount Vernon, N. Y	30,919				38						1			
Newcastle, Pa	36,280		6				1				1		11	
Newport, Ky	30,309	14	1						1		3	3	1	1
Newton, Mass	39,806	16	1		3		1					2		
Niagara Falls, N. Y	30,445	17	5	1	1		1					1	1	2
Norristown, Pa	27,875	9			20		1				1	1	1	
Orange, N. J	29,630	23			1		2					1		
Pasadena, Cal	30,291	9										1		
Pittsfield, Mass	32,121	9	2				1				3			
Portsmouth, Va	33,190	7	2											
Racine, Wis	38,002	6	1				1							
Roanoke, Va	34,874	16	2		36						5	5		
Rockford, Ill	45,401	9												
Salem, Mass	43,697	9			1		4							
San Diego, Cal	39,578		1				1		1					
South Omaha, Nebr	26,259	5	1											
Superior, Wis	40,384	4	1						2					
Taunton, Mass	34,259	18	1				1					1		
Waltham, Mass	27,834	10	1		22		2							
Wheeling, W. Va	41,641		1		1						3	3	7	
Williamsport, Pa	31,860	5	2				1				1			
Wilmington, N. C	25,748	14					1		4		1			
York, Pa	44,750						1				5			
Zanesville, Ohio	28,026	4	3				1					1	16	1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 3, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	7					1						3	1
Beaver Falls, Pa	12,191	5	1				1				2			
Bennington, Vt		4												
Braddock, Pa	19,957	7									1	1		
Butler, Pa	20,782	2					1				1			
Cambridge, Ohio	11,327	2												
Camden, S. C							2						1	
Carbondale, Pa	17,040	2	2				9							
Clinton, Mass	13,075	3	1											
Coffeyville, Kans	12,687						3	1			1		1	
Columbus, Ga	20,554	6										1		
Columbus, Ind		4							3			1		
Concord, N. H	21,497	12			1		1					2		
Cumberland, Md	21,839	13	1									2	1	
Dunkirk, N. Y		1												
Galesburg, Ill	22,089	7									1	1		
Harrison, N. J	14,498	2	9	2										
Kearny, N. J	18,659	7												
La Fayette, Ind	20,081	4												
Lebanon, Pa	19,240		4										1	
Manistee, Mich	12,381						5				1	1		
Marinette, Wis	14,610	1			7								3	
Marlboro, Mass	14,579	4	2				2					1		
Massillon Ohio		1										1		
Medford, Mass	23,150	9	2		1		3				1			
Melrose, Mass	15,715	5			45							1		
Moline, Ill	24,199	7										1		
Montclair, N. J		13	2				1				1			
Morristown, N. J	12,507	7					1						1	
Nanticoke, Pa	18,857	6			14									
Newburyport, Mass	19,240	3									1			
North Adams, Mass	22,012	10									2			
Northampton, Mass	19,431	5			1								3	
Ottumwa, Iowa	22,012	10												
Palmer, Mass		3												
Peekskill, N. Y		6												
Plainfield, N. J	22,550	5		1	3		2				7			
Pottstown, Pa		9										1	2	
Rutland, Vt	13,546	7												
Saratoga Springs, N. Y		6									2	1		
South Bethlehem, Pa	19,973	8	4		13	1						1		
Steelton, Pa	14,246	5												
Warren, Pa	11,081	5	4	2			1							
Wilkinsburg, Pa	18,924	4					2				2			
Woburn, Mass	15,308	2	1											

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

Connecticut.—Month of January, 1912. Population of reporting towns, 1,130,847. Total number of deaths from all causes 1,597, including diphtheria 18, measles 4, scarlet fever 10, tuberculosis (pulmonary) 115, typhoid fever 7. Cases reported: Diphtheria 147 in 45 towns, measles 483 in 41 towns, scarlet fever 186 in 43 towns, tuberculosis (pulmonary) 114 in 39 towns, typhoid fever 31 in 19 towns.

Iowa.—Month of December, 1911. Population, 2,224,771. Total number of deaths from all causes 1,647, including diphtheria 22, scarlet fever 7, tuberculosis 121, typhoid fever 33.

Kansas.—Month of November, 1911. Population, 1,690,949. Total number of deaths from all causes not reported. The deaths include diphtheria 7, scarlet fever 5, tuberculosis 19, typhoid fever 1. Cases reported: Diphtheria 114, measles 28, scarlet fever 273, smallpox 205, tuberculosis 259, typhoid fever 61.

Massachusetts.—Week ended December 2, 1911. Population of reporting towns, 2,593,485. Total number of deaths from all causes 675, including diphtheria 4, measles 2, scarlet fever 3, tuberculosis 62, typhoid fever 5. Cases reported: Diphtheria 136, measles 180, scarlet fever 114, tuberculosis 99, typhoid fever 38.

Week ended December 9, 1911. Total number of deaths from all all causes 713, including diphtheria 13, scarlet fever 2, tuberculosis 64, typhoid fever 6. Cases reported: Diphtheria 142, measles 202, scarlet fever 126, tuberculosis 133, typhoid fever 30.

Week ended December 16, 1911. Total number of deaths from all causes 708, including diphtheria 10, measles 4, tuberculosis 76, typhoid fever 7. Cases reported: Diphtheria 139, measles 309, scarlet fever 154, tuberculosis 146, typhoid fever 30.

Week ended December 23, 1911. Total number of deaths from all causes 670, including diphtheria 10, measles 3, scarlet fever 3, tuberculosis 66, typhoid fever 6. Cases reported: Diphtheria 143, measles 251, scarlet fever 109, smallpox 2, tuberculosis 130, typhoid fever 27.

Week ended December 30, 1911. Total number of deaths from all causes 803, including diphtheria 9, measles 3, scarlet fever 2, tuberculosis 68, typhoid fever 3. Cases reported: Diphtheria 164, measles 251, scarlet fever 110, tuberculosis 116, typhoid fever 22.

FOREIGN AND INSULAR.

AUSTRALIA.

Sydney—Examination of Rats.

The following information was taken from bulletins issued by the department of public health of New South Wales: During the two weeks ended December 16, 1911, 881 rats were examined for plague infection. No plague-infected rats were found.

The last case of human plague was reported May 29, 1909.

The last plague-infected rat was found April 25, 1910.

AUSTRIA-HUNGARY.

Hungary Declared Free From Cholera.

According to information dated January 13 received from the ministry for foreign affairs, Hungary has been declared free from cholera.

CHINA.

Amoy—Plague.

Acting Asst. Surg. Bonthius reports the occurrence of a death from plague in the international settlement of Kulangsu during the week ended January 13.

Hongkong—Communicable Diseases—Examination of Rats.

Surg. Brown reports that during the month of December, 1911, communicable diseases were reported in Hongkong as follows: Diphtheria 16 cases with 7 deaths, plague 4 cases with 3 deaths, smallpox 47 cases with 38 deaths, and typhoid fever 8 cases with 1 death.

During the same period 6,879 rats were examined for plague infection. No plague-infected rat was found.

GREECE.

Cerebrospinal Meningitis.

Consul General Gale reported January 13 that cerebrospinal meningitis was present in Thessaly, a district situated in the northern part of Greece, and that the disease continued present in Athens and vicinity.

Consul Gale further reported the occurrence of 2 deaths from cerebrospinal meningitis in Piraeus during the week ended January 29.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911, and a fatal case February 9, 1912.

The last plague-infected rat was found at Honokaa December 18, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

Total number of rats and mongoose taken	430
Rats trapped	424
Mongoose trapped	6
Rats examined bacteriologically	390
Classification of rats trapped:	
Mus alexandrinus	51
Mus musculus	101
Mus norvegicus	31
Mus rattus	241
Average number of traps set daily	1,720

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended January 6, 1912, 23 deaths from cholera and 6 from plague were reported in Calcutta; in all Bengal, 785 cases of plague, with 623 deaths; in all India, 11,076 cases of plague, with 9,114 deaths.

ITALY.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo, week ended January 27, 1912:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Jan. 22	San Guglielmo	New York			
25	Taormina	do	579	80	830
25	San Guglielmo	do	395	60	620
27	Madonna	do	535	90	580
	Total		1,509	230	2,030

PALERMO.

Jan. 24	Oceania	New York			
24	San Guglielmo	do	338	125	250
26	Arimatea	do			
	Total		338	125	250

MEXICO.

Salina Cruz—Yellow Fever on Vessel.

Consul Haskell reports the arrival, February 4, of the steamship *Ikalis* from Guayaquil, Equador, with 5 cases of yellow fever on board. The patients were removed to the lazaretto.

Typhus Fever.

Consul Schmutz, at Aguascalientes, reports the occurrence of 6 deaths from typhus fever during the week ended February 3.

RUSSIA.

Typhus Fever.

Consul Grout, at Odessa, reports the occurrence of 109 cases of typhus fever with 9 deaths during the 3 weeks ended January 13.

At Omsk, capital of Akmolinsk Province, Asiatic Russia, typhus fever was reported present in epidemic from January 29. Omsk is situated on the Trans-Siberian Railway.

SIAM.

Bangkok—Cholera.

Consul General Hansen reports that during the month of December, 1911, there occurred 410 deaths from cholera at Bangkok.

The population of Bangkok is approximately 600,000.

TUNIS.

Declared Free From Cholera.

According to information received from the ministry for foreign affairs at Paris the Regency of Tunis is no longer to be considered as cholera-infected, no case of cholera having occurred there since January 10, 1912.

WEST INDIES.

Yellow Fever at St. Vincent.

A case of yellow fever was reported February 19 at St. Vincent, Windward Islands.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED FEB. 23, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bahrein Island	Nov. 27-Dec. 30		[1]200	In the Persian Gulf.
Calcutta	Jan. 31-Feb. 6		23	
Indo-China:				
Saigon	Dec. 26-Jan. 1	347	247	
Siam:				
Bangkok	Dec. 3-20		410	
Turkey in Europe:				
Constantinople	Jan. 15-21		1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received during week ended Feb. 23, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Merida	Jan. 28-Feb. 3	4	1	
West Indies:				
St. Vincent	Feb. 19	1		

PLAGUE.

Brazil:				
Para	Jan. 21-27	6	6	
India:				
Calcutta	Jan. 31-Feb. 6		6	
Indo-China:				
Saigon	Dec. 26-Jan. 1	6		
Java:				
Kediri	Nov. 26-Dec. 2	1	1	
Madioen	do	5	5	
Mauritius	Nov. 24-30	16	12	
Turkey in Asia:				
Jiddah	Jan. 13-15	2		

SMALLPOX.

Canada:				
Quebec	Feb. 4-10	13		
Montreal	do	5		
Windsor	do	2		
China:				
Hongkong	Dec. 31-Jan. 6	28	22	
Shanghai	Jan. 1-7		1	
Egypt:				
Cairo	do	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
London	Feb. 14-20		1	
France:				
Paris	Jan. 14-20	8	1	
Germany:				
Hamburg	Jan. 21-27	1		
India:				
Calcutta	Jan. 21-Feb. 6		1	
Indo-China:				
Saigon	Dec. 26-Jan. 1	3		
Italy:				
Genoa	Jan. 16-31	13	1	
Leghorn	Jan. 29-Feb. 3	15		
Naples	Jan. 21-27	8		
Palermo	Feb. 21-27	143	60	
Java:				
Batavia	Jan. 1-6	2		
Mexico:				
Aguascalientes	Jan. 26-Feb. 3		1	
Guadalajara	Jan. 26-Feb. 10		1	
Juarez	Feb. 3-10	2		
Mazatlan	Jan. 31-Feb. 6		1	
Porfirio Diaz	Jan. 28-Feb. 3	4	4	
Portugal:				
Lisbon	Jan. 21-27	2		
Russia:				
Batum	Dec. 1-31	1		
Moscow	Jan. 14-20	1	1	
Riga	Dec. 24-Jan. 27	16		Oct. 1-Nov. 30; deaths, 2.
St. Petersburg	Jan. 6-13	7	2	
Siam:				
Bangkok	Nov. 5-Dec. 2		185	
	Dec. 2-30		441	
Teneriffe:				
Santa Cruz	Jan. 21-27		2	
Turkey in Asia:				
Beirut	Jan. 14-27	170	22	
Turkey in Europe:				
Constantinople	Jan. 22-28		6	

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[1] From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, Jan. 24, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

REPORTS RECEIVED FROM DEC. 30, 1911, TO FEB. 16, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24-Nov. 25: Cases, 872; deaths, 525.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India:				
Calcutta	Nov. 5-Dec. 30		277	
Madras	Nov. 26-Jan. 13	400	330	Madras Presidency, Dec. 1-31: Cases, 3,879; deaths, 2,412.
Rangoon	Oct. 1-Nov. 30	6	3	
Indo-China:				
Saigon	Nov. 20-Dec. 24	514	381	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including cases previously reported.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Nov. 6-23: 1 death, including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia:				
Belgrade, district	Nov. 26-Dec. 16		1	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Dec. 2		149	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	
Tripoli:				
Tripoli	Oct. 25-Nov. 10			150 to 200 among the civil population and 25 to 30 among the military, Dec. 21, 1911.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 356; deaths, 396.
Beja district	Nov. 25-Dec. 7	30	35	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia:				
Adana	Dec. 2-6	16	5	
Aleppo	Jan. 26-27	5	3	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 16, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia—Continued.				
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Jan. 2	6	1	
Durazzo	Dec. 7-13	2		
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Manaos	Nov. 19-Jan. 6		8	
Para	Dec. 9-16	1	1	
Ecuador:				
Bucay	Nov. 16-30	2		
Duran	Dec. 1-15	3	2	
Guayaquil	Nov. 16-Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Maxcanu	do	1		
Merida	Nov. 12-Jan. 27	11	8	Total Aug. 1-Feb. 3: Cases, 60; deaths, 29.
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Dec. 31	17		
Sabana Grande	Dec. 12			Epidemic.
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases p. 2096, Vol. XXVI.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Jan. 20	12	4	
Pernambuco	Oct. 16-Jan. 16		4	
Rio de Janeiro	Nov. 12-Dec. 23	6	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
British South Africa:				
Durban	Jan. 17	2	1	
Chile:				
Iquique	Nov. 12-Jan. 6	10	4	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9-30	4	3	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 9: Cases, 1,777; deaths, 1,262.
Pasoeroean Residency, Malang District.	Nov. 12-Dec. 30	56	25	
Soerobaya	Oct. 17-27	2		
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Ecuador:				
Guayaquil	Nov. 16-Dec. 15	102	42	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 16, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1-25	12	8	Sept. 11-16: Cases, 50; deaths, 28.
Behera	do	3	2	Sept. 11-16: Cases, 11; deaths, 8.
Galioubeh				Oct. 5-Dec. 26: Cases, 1.
Garbieh	Jan. 1-25	1		
Kena	do	1	1	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Minieh	do	2	1	Dec. 13: Cases, 1.
Hawaii:				
Honakaa	Feb. 9	1	1	
India:				
Bombay	Nov. 19-Jan. 13	74	66	
Calcutta	Nov. 11-Dec. 30		40	
Karachi	Nov. 26-Jan. 13	38	36	Total, year 1911: Cases, 3,273; deaths, 3.046.
Rangoon	Oct. 1-Nov. 30	38	39	
Bombay Presidency and Sind.	Oct. 29-Dec. 30	35,557	25,895	
Madras	Jan. 1-6	1	1	
Madras Presidency	Oct. 29-Dec. 30	4,687	3,770	
Bengal	do	3,893	2,827	
United Provinces	do	12,270	10,459	
Punjab	do	1,229	896	
Burma	do	206	187	
Central Provinces	do	6,883	5,234	
Coorg	do	75	42	
Mysore State	do	4,913	3,801	
Hyderabad State	do	10,830	10,038	
Central India	do	4,242	3,486	
Rajputana and Ajmere Merwara.	do	457	362	
North West Province	Oct. 29-Dec. 9	1	1	Total for India, Oct. 29-Dec. 30: Cases, 85,243; deaths, 66,997: Total, year 1911: Cases, 828,535. deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Dec. 24	15	5	
Mauritius	Nov. 3-23	13	8	
Peru:				
Salaverry	Dec. 25-Jan. 9			Present in vicinity.
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Nov. 28-Dec. 20	87	84	
Siam:				
Bangkok	Nov. 4-Dec. 2		2	
Straits Settlements:				
Singapore	Nov. 5-Dec. 30	15	14	

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Arabia:				
Aden	Nov. 28-Jan. 15	5	3	And vicinity.
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	Oct. 1-Nov. 30		31	
Austria-Hungary:				
Galicia	Dec. 24-30	1		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Nov. 30		246	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Jan. 6	3	1	
Canada:				
British Columbia—				
Nelson	Dec. 24-30	1		
Manitoba—				
Winnipeg	Jan. 14-20	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 16, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Jan. 27	45		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-13		1	
Quebec—				
Montreal	Dec. 17-Jan. 27	8		
Quebec	Dec. 10-Feb. 3	195	1	
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Iquique	Dec. 10-16	2		
La Serena	Nov. 21-30	14		
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chungking	Nov. 18-Dec. 9			Present.
Hongkong	Nov. 12-Dec. 30	72	56	
Nanking	Dec. 10-16			Do.
Shanghai	Dec. 11-17		1	
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald from Spain and Canary Islands, case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-16	1		
France:				
Marseille	Nov. 1-30		1	
Paris	Dec. 3-Jan. 13	43	2	
Germany				Total, Dec. 31-Jan. 27: Cases, 9.
India:				
Bombay	Nov. 19-Jan. 13	71	39	
Calcutta	Nov. 19-Dec. 23		16	
Madras	Nov. 26-Jan. 13	40	23	
Rangoon	Oct. 1-Nov. 30	29	9	
Indo-China:				
Saigon	Nov. 13-Dec. 24	20		
Italy:				
Genoa	Dec. 1-Jan. 15	20	1	
Leghorn	Dec. 16-Jan. 27	84	1	
Messina	Nov. 19-Dec. 31		5	
Naples	Dec. 3-Jan. 20	42		
Palermo	Nov. 26-Jan. 20	1,803	595	
Turin	Jan. 15-21	2		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Java:				
Batavia	Nov. 12-Dec. 23	15	4	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Jan. 28		3	
Chihuahua	Nov. 20-Jan. 21	62	21	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-20		1	
Juarez	Dec. 19-Feb. 3	7	4	
Magdalena	Dec. 23-Jan. 31		37	Jan. 31, 81 cases present.
Mazatlan	Dec. 11-Jan. 30		9	
Mexico	Nov. 26-Dec. 30	31	18	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Jan. 22		26	
San Antonio	Jan. 1-21	12	9	
San Carlos	Jan. 1-21			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Dec. 2	3		
Tampico	Dec. 1-31	4	4	
Tapachula	Nov. 1-Dec. 31		14	
Portugal:				
Lisbon	Dec. 9-Jan. 6	19		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 16, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia:				
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Jan. 13	21	7	
Odessa	Nov. 26-Jan. 13	10	1	
Reval	Nov. 1-30	1		
St. Petersburg	Nov. 19-Jan. 6	88	12	
Warsaw	Nov. 5-Dec. 2		185	
Spain:				
Cadiz	Nov. 1-Dec. 31		14	
Madrid	Dec. 1-31		1	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-31		5	
Valencia	Dec. 3-Jan. 27	107	10	
Straits Settlements:				
Singapore	Nov. 19-Dec. 30	12	4	
Switzerland:				
Zurich, Canton	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Jan. 13		29	
Turkey in Asia:				
Beirut	do	115	25	
Turkey in Europe:				
Constantinople	Dec. 4-Jan. 21		39	
Janina	Jan. 22	17	8	
Loros	do	12	7	
Uruguay:				
Montevideo	Sept. 1-Nov. 30	23	4	
Venezuela:				
Caracas	Nov. 1-Dec. 31	11		
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough
Aberdeen	Jan. 27	163,084	51									1	1	
Aguascalientes	Feb. 3	40,000	42					1				1		
Aix-la-Chapelle	Feb. 13	156,513	53	6							1	1	1	
Amsterdam	Jan. 27	580,962	149	13							1	1	4	1
Antwerp	Jan. 20	327,668	80	12							4	1		
Barmen	Dec. 23	170,900		3									2	
Do	Jan. 13			2								3		
Beirut	Jan. 20	80,000	25	2				7		5				
Belfast	Jan. 27	385,492	206	27						1	1	1		12
Birmingham	do	842,512	252								2	2		10
Bremen	Jan. 13	246,850	83	12							2	5	6	1
Do	Jan. 20		68	4							1		8	1
Budapest	Jan. 13	1,000,000								4	6	2	7	
Cairo	Jan. 7	689,439	462	22				1	1	2		8		
Calcutta	Jan. 6	890,493	521	32	6	23		1						
Catania	Jan. 26	207,600	78	1							1	1	1	
Cologne	Jan. 20	527,847	149	15						1	2	3	6	6
Colombo	Jan. 6	226,920	190	16						12				
Copenhagen	Jan. 13	465,000	143	22							1			3
Dalny	Jan. 6	47,983	25									2		
Do	Jan. 13		10							1				
Denia	Jan. 27	12,431	3								1			
Dresden	Jan. 13	555,000	142	13							3	5		1
Dublin	Jan. 27	406,536	195	37							2	1	3	

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Dundee	Jan. 27	171,006	48	6								1		
Durban	Jan. 6	69,165	10									1		
Edinburgh	Jan. 27	321,200	109	13								2	6	
Erfurt	Jan. 13	125,500	34	3									8	
Do	Jan. 20		33	4								3		1
Frankfort-on-Main	Jan. 13	423,600	93									3		
Ghent	Jan. 20	166,235	33	3							1	1		
Glasgow	Feb. 2	785,600	307							3	1	6	22	6
Guadalajara	Feb. 3	119,468	73					2						
Havre	Jan. 27	136,159	74	14							1		2	
Hull	..do	282,987	67							1				
Kobe	Jan. 14	418,646	149									1		
Konigsberg	Jan. 13	251,000	99	15								1	2	2
Do	Jan. 20		88	11									1	4
Leeds	Jan. 27	445,568	157	14							4	5		1
Leipzig	Jan. 13	605,755	152	20						1		2		
Do	Jan. 20		151	22						1	1	3	2	3
Liverpool	Jan. 27	752,055	296	32							2	3	3	3
London	Jan. 20	7,340,125	1,859	24				1		4	4	20	9	
Do	Jan. 27		2,055							4	4	22	15	25
Manchester	..do	631,533	276	29						2		1	11	2
Mannheim	Jan. 6	200,000	34	6							1			1
Mazatlan	Feb. 6	22,000	21	5				1						
Munich	Jan. 13	610,000	175	25						1		3	1	1
Do	Jan. 20		162	22						1		1		
Nagasaki	Jan. 7	178,074	41	6								1		
Nagaya	Dec. 30	419,434	111									3		
Do	Jan. 6		100							1		1		
Nantes	Jan. 14		84	18						1				
Do	Jan. 21	161,908	69	18						2				
Newcastle-on-Tyne	Jan. 27	267,261	92	3							1			
Nottingham	Jan. 20	259,942	81	6						1		1	2	
Newcastle-on-Tyne	..do	267,261	83	7							1			
Nottingham	Jan. 13	259,942	86	9								1	7	1
Odessa	Dec. 30	546,000	167	27					1	2	2	2	6	
Do	Jan. 6		150	25					6		1	3	2	
Do	Jan. 13		161	20					2	3		2	2	
Ottawa	Jan. 27	90,000	31	1										
Palermo	Jan. 20	340,000	220	15				49		2	4	1		
Para	Jan. 13	185,000	11		2									
Do	Jan. 20		6		1									
Paris	..do	2,888,110	961	206				1		10	3	5	14	7
Porfirio Dias	Feb. 3	16,000	15	1				4						
Port Elizabeth	Dec. 23	30,692	20	3						2				
Do	Dec. 30		15	1						1				
Prague	Jan. 13	225,204	88	9							1		18	
Do	Jan. 20		76	17							1		10	1
Quebec	Feb. 10	78,200		3								2		
Rangoon	Jan. 6	289,432	169		4	11								
Rio de Janeiro	Dec. 30	912,169	363	68									3	7
Do	..do		377	65									4	5
Rome	Sept. 16–Oct. 21	551,749	1,093	138						33	1	5	1	5
Rotterdam	Jan. 20	436,015	105									1		
Do	Jan. 27		116									2		
Sargon	Dec. 24	220,000				212								
Do	Jan. 1					247								
St. Johns	Jan. 20									1				
St. Petersburg	Jan. 6	1,907,708	725	136				3		21	15	8	23	3
San Luis Potosi	Dec. 16	82,479	45	2						4				
Santa Cruz de Teneriffe	Jan. 20	46,000	18	1				1				1		
Shanghai	Dec. 31	492,000	139	14							1	1		
Do	Jan. 7		167	18				1				1	21	
Do	Jan. 14		125	20								1	10	
Sheffield	Jan. 13	455,000	129	13						2		1		2
Do	Jan. 20		114	10						1		2	1	4
Singapore	Dec. 23		192	22				2		1		1		
Do	Dec. 30	303,328	198	19	3					3				

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Smyrna	Dec. 30 Jan. 20	400,000	280	46						4		2		
Southampton	Jan. 27	120,891	31	3						1		1		
Stettin	Jan. 20	237,000	69	6							1	1		
Stockholm	Jan. 13	343,832	90	19							2		2	
Stoke-on-Trent	Jan. 20	237,153	80	8						2	1	1	3	
Do	Jan. 27		100	10						2	1	1	2	3
Tarragona	Jan. 20	23,150	9	1									1	
Do	Jan. 27		9	1									1	
Tientsin	Jan. 13	425,500	19	4										1
Trieste	Jan. 6	233,925	104									2		1
Do	Jan. 13		128							1		1	2	
Turin	Jan. 21	401,555	144	13								3	3	1
Do	Jan. 28		163	21						1		2	2	
Vancouver	Jan. 13	100,333	22	2								2	1	
Do	Jan. 20		25									1	1	
Vienna	Jan. 13	2,064,583	92								4	5	7	4
Yokohama	Jan. 15	419,630								2				
Do	Jan. 22									1		1		

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (untabulated).

AUSTRALIA—*Newcastle.*—Month of December, 1911. Population, 60,500. Total number of deaths from all causes 54, including tuberculosis 5, typhoid fever 2.

BRAZIL—*Ceara.*—Month of December, 1911. Population, 60,000. Total number of deaths from all causes 111, including tuberculosis 18, typhoid fever 7.

CANADA—*Victoria.*—Month of January, 1912. Population, 31,620. Total number of deaths from all causes 39, including tuberculosis 2.

GREAT BRITAIN.—Week ended January 20, 1912.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 14.8 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 21.8 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Clonmel, viz, 5.1, and the highest at Kilkenny, viz, 49.6 per 1,000.

Scotland.—The deaths registered in 18 towns correspond to an annual rate of 17.3 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Hamilton, viz, 7.9, and the highest at Ayr, viz, 26.4 per 1,000. The total number of deaths from all causes was 725, including diphtheria 10, measles 56, scarlet fever 6, typhoid fever 4.

Hawaii—*Honolulu.*—Two weeks ended January 27, 1912. Population 39,306. Total number of deaths from all causes 51, including tuberculosis 6, typhoid fever 1.

Japan—*Formosa.*—Three weeks ended December 23, 1911. Population 3,341,217. Total number of deaths from all causes not reported. The deaths include diphtheria 3, tuberculosis 14.

Panama—*Panama.*—Four weeks ended January 27, 1912. Population 30,000. Total number of deaths from all causes not reported. The deaths include tuberculosis 12.

Porto Rico—*Ponce.*—Three weeks ended February 3, 1912. Population 27,952. Total number of deaths from all causes not reported. The deaths include tuberculosis 10.

Siam—*Bangkok.*—Month of December, 1911. Population 600,000. Total number of deaths from all causes not reported. The deaths include cholera 410, smallpox 441.

Tasmania—*Hobart.*—Month of December, 1911. Population 191,211. Total number of deaths from all causes 148, including measles 1, tuberculosis 16, typhoid fever 3.

By authority of the Secretary of the Treasury:

Rupert Blue,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

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THE TRANSMISSION OF TYPHUS FEVER, WITH ESPECIAL REFERENCE TO TRANSMISSION BY THE HEAD LOUSE (*PEDICULUS CAPITIS*).

By Joseph Goldberger, Passed Assistant Surgeon, and John F. Anderson, Director Hygienic Laboratory, Public Health and Marine-Hospital Service.

In a recent paper[1] we showed that Brill's disease, which is apparently endemic in New York City, is identical with the typhus fever of Mexico, and as it is reasonably certain that the New York disease is of European origin we also concluded that the typhus of Europe and that of Mexico are identical. During the progress of the experiments necessary for the foregoing demonstration of the identity of the so-called Brill's disease and Mexican typhus we took up the study of various related problems. These studies were carried out concurrently in Mexico and at the Hygienic Laboratory in Washington.

At this time we desire to present the results of some of our work on the mode of transmission of this disease. Before presenting the details of this work it will be desirable to briefly review the present status of our knowledge of the transmission of typhus fever.

Nicolle, Comte, and Conseil[2] were the first to demonstrate insect transmission of typhus fever. In September, 1909, they reported the successful transmission of typhus fever from one bonnet monkey (*M. sinicus*) to two others by means of the body louse (*Pediculus vestimenti*). In this paper they showed that body lice that had fed upon an infected monkey were able to convey typhus fever some time between the first and the seventh day thereafter.

Independently of Nicolle, Comte and Conseil, Anderson and Goldberger,[3] beginning their work on this problem in November, 1909, reported two attempts to transmit Mexican typhus from man to monkey by means of the bite of the body louse in February, 1910. In one of their experiments one of the monkeys showed a slight elevation of temperature 8 days after the last exposure to the bites of the infected lice. Unfortunately, circumstances prevented their making an immunity test; but in the light of later studies it seems probable that the elevation of temperature was due to infection with typhus.

Ricketts and Wilder,[4] also working in Mexico, reported in April, 1910, that they were able to transmit the virus of typhus fever by means of the bite of the body louse from man to monkey and from monkey to monkey. They also reported the successful transmission of typhus virus to the monkey by introducing into scarifications of the skin the abdominal contents of some infected lice. They record the interesting observation that, as a rule, in their louse experiments, the monkeys had no very significant temperature reaction and that proof of infection was dependent upon immunity tests with virulent blood.

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[1] Anderson, John F., and Goldberger, Joseph: The relation of so-called Brill's disease to typhus fever. An experimental demonstration of their identity. Public Health Reports, vol. 27, Feb. 2, 1912, p. 149.

[2] Nicolle, Charles; Comte, C.; and Conseil, E.: Transmission experimentale du typhus exanthematique par le pou du corps. C. R. des Acad. Sci., vol. 149, Sept. 6, 1909, p. 486.

[3] Anderson, John F., and Goldenberger, Joseph: On the infectivity of tabardillo or Mexican typhus for monkeys and studies on its mode of transmission. Public Health Reports, vol. 25, Feb. 18, 1910, p. 177.

[4] Ricketts, Howard T., and Wilder, Russell M.: The transmission of the typhus fever of Mex dillo) by means of the louse (*Pediculus vestimenti*). Journ. Am. Med. Assn., vol. 54, Apr. 16, 1 1307.

In July, 1911, Wilder [1] reported additional experiments on infection of monkeys with body lice by biting and intradermal inoculation.

In January, 1911, Nicolle and Conseil,[2] continuing their work of September, 1909, report further successful experiments on the transmission of typhus fever to the bonnet monkey by means of the bite of infected body lice.

EXPERIMENTAL.

Body lice (Pediculus vestimenti).

The first experiments we wish to report were made with body lice.

Experiment No. 1.—A number of body lice were collected from the clothes of healthy persons and on the afternoon of October 18, 1911, were applied to the belly of rhesus No. 158. They were again allowed to feed on No. 158 in the morning and afternoon of October 19, and again in the morning of October 20. In the afternoon of October 20 and thereafter twice daily up to and including October 22 they were fed on rhesus No. 157. Rhesus No. 157 and No. 158 were both sick at this time with typhus fever (New York virus—Brill's disease). After having fed in diminishing numbers on 5 successive days on sick monkeys the lice were applied to a fresh monkey, rhesus No. 127, in the morning and afternoon of October 23 and twice daily thereafter up to and including October 29, when feeding was discontinued. At this time 22 of the lice were still alive and were used in experiment No. 2. During the experiment the lice were kept at a temperature of 15° to 18° C.

Rhesus No. 127 was kept under observation for 37 days after the last feeding, when the animal was given an immunity test by inoculation with virulent blood. After 9 days incubation rhesus No. 127 developed typhus fever, indicating that the animal had not been infected by the previous biting of the lice.

Experiment No. 2.—The lice used in experiment No. 1 were killed with chloroform vapor on October 30, the day after their last feed on rhesus No. 127. They were then ground in a mortar with salt solution and injected subcutaneously into rhesus No. 137. Forty-three days later, having in the meantime given no evidence of infection with typhus fever, this monkey was given an immunity test consisting of an injection of virulent blood (New York virus). To this it responded after 9 days incubation with a typical attack of typhus fever, showing that the injection of crushed lice killed with chloroform vapor had not infected rhesus No. 137 with typhus.

Experiment No. 3.—On October 27 about 150 body lice were obtained from the clothes of healthy persons and applied to the belly of rhesus No. 139 in the afternoon of the same day. Twice daily thereafter up to and including the morning of October 31, they were allowed to feed on rhesus No. 139. In the afternoon of October 31 and in the morning and afternoon of November 1 they fed on rhesus No. 95. Rhesus Nos. 139 and 95 were at this time both sick with typhus, induced by blood inoculation with the New York virus (Brill's disease). From November 2 up to and including November 9 they were fed twice daily on rhesus No. 165, a fresh monkey. When the feedings were discontinued on November 9 only 9 lice remained alive. Throughout this experiment the lice were kept at 15° to 18° C. Chart No. 1 shows the temperature curve of rhesus No. 165 from the first feeding by infected lice on November 2 up to the time of the animal's death. Eleven days after the first and 4 days after the last feeding by infected lice the temperature of rhesus No. 165 began to rise and remained elevated 4 days, when it fell below its normal range. Ten days later the animal apparently had a relapse lasting 3 days. From this time on the animal progressively failed, and death occurred on December 8. At the autopsy no macroscopical changes were noted in any of the organs. An attempt at passage on the first day of what we interpret as typhus fever, with the blood of this animal, using washed corpuscles, failed.

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[1] Wilder, Russell M.: The problem of the transmission of typhus fever, Journ. Infec. Dis., vol. 9, July, 1911, p. 9–101.

[2] Nicolle, Charles, and Conseil, C.: Etiologie du typhus exanthematique. Ann. de l'Inst. Pasteur, vol. 25, p. 68–78.

In spite of the failure at passage (compare experiment No. 7 below), we believe it is permissible to conclude that the rise in temperature of rhesus No. 165, beginning on November 13, was due to infection with typhus (Brill's disease), following the bite of infected lice from 4 to 11 days previously.

Experiment No. 4.—On November 2, 6 days after their first and 1 after their last infecting feed, 10 of the lice used in experiment No. 3 were killed with chloroform vapor, ground in a mortar with salt solution, and injected subcutaneously into rhesus No. 145. Having given no evidence of a constitutional reaction, the immunity of this animal was tested 40 days after the injection of the crushed lice by an injection of virulent typhus blood (New York virus). The monkey developed fever after 8 days' incubation, indicating that infection with typhus had not resulted from the subcutaneous injection of crushed lice killed with chloroform vapor.

Experiment No. 5.—About 9.30 a. m. on December 3, 83 body lice (*Pediculus vestimenti*) of group No. 7–M [1] and 83 of group No. 8–M were mixed, crushed in a mortar, and ground up in saline solution. Of this suspension 3.5 c. c., representing about 35 body lice, was subcutaneously injected into rhesus No. 308 and 1.5 c. c., representing about 15 lice, into rhesus No. 309.

Body lice of group No. 7–M had been allowed to feed daily during the 6 days immediately prior to the date of the experiment on various cases of typhus fever in the Hospital General, Mexico City. They were last applied to case No. 16–M, in the eleventh day of illness, at 10.50 to 11.20 a. m. December 2.

Body lice of group No. 8–M were insects that had been allowed to feed daily during the 5 days immediately preceding the date of the experiment on various cases of typhus fever. They were last applied to case No. 16–M, in the eleventh day of illness, at 10.20 to 10.50 a. m.

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[1] M=Mexican series; N=New York series.

December 2. Throughout the experiment these lice were kept at room temperature (about 14° to 24° C.).

Following the foregoing inoculations a slight redness of the skin developed at the site of injection in rhesus No. 308. This was incised about 24 hours after inoculation, but no pus was found. In the case of rhesus No. 309 some redness and swelling developed at the site of injection, which was incised 24 hours after the injection and a small amount of pus evacuated. During the period of observation of both animals no evidence of a febrile reaction was noted in either.

On January 10, 1912, or 38 days after their inoculation with the crushed-lice suspension, having in the meantime been returned to the Hygienic Laboratory, the two monkeys were given an immunity test, each animal receiving 3 c. c. of defibrinated blood of rhesus No. 187 (New York virus) intravenously. Following this inoculation both animals reacted sharply, No. 308 after an incubation period of 8 and No. 309, of 9 days.

The inoculation of these two animals with the crushed-lice suspension had, therefore, been without appreciable result.

Experiment No. 6.—The preceding experiment was repeated on December 10, with 73 body lice (*P. vestimenti*) of group No. 9-M. The body lice composing this group were variously applied and fed on cases of typhus fever at the Hospital General, Mexico City, during the 6 days immediately prior to the date of the experiment. Throughout this period they were kept at room temperature (14° to 24° C.). They were last applied on December 9, between 10.15 a. m. and 12 m., to case No. 19-M, in the seventh day of illness. About 29 hours later, namely, December 10, at 5.30 p. m., they were crushed and rubbed up in saline solution and at 8.05 p. m. subcutaneously injected in rhesus No. 320. During the subsequent period of observation monkey No. 320 gave no evidence of a reaction.

On January 10, 1912, 31 days after the injection of the crushed-lice suspension, having in the meantime been returned to the Hygienic Laboratory, this animal was given an immunity test consisting of an injection of 3 c. c. of defibrinated blood of rhesus No. 187 (New York virus), part intravenously and part subcutaneously. Twenty-one days later, namely, January 31, having in the meantime given no indication of a reaction, he was given a second immunity test, consisting of 2.5 c. c. of defibrinated blood of rhesus No. 115ª (New York virus) intravenously. During a period of observation of 23 days following this inoculation no evidence of a reaction developed. At each test a pair of fresh monkeys were inoculated as controls, and in each instance one of the respective pairs developed fever. Although only one of each pair of controls reacted, we believe it more than probable that the failure of monkey No. 320 to react was due to an immunity conferred by the previous injection with crushed-lice suspension.

Head lice (*Pediculus capitis*).

Although all the important features of the epidemiology of typhus are satisfactorily explained on the basis of its transmission by means of the body louse (*P. vestimenti*), nevertheless, on account of the close relationship between this insect and the head louse (*P. capitis*), it seemed desirable to test the possibility of the transmission of the disease by this latter species.

Our first experiment with head lice was made to determine whether the virus of typhus was capable of retaining its virulence as long as 20 to 24 hours in the body of this insect.

Experiment No. 7.—On November 14, 1911, 17 lice of group No. 1–M were crushed and rubbed up in saline solution and then, after a moment's standing to allow the coarse particles to settle, the suspension was injected subcutaneously into rhesus No. 306. The lice of group No. 1–M were obtained from the hair clipped from the scalp of case No. 4–M on November 12, on admission to the typhus ward of the Hospital General, Mexico City. At the time of admission this patient was in the eighth day of his disease. At 10 a. m., November 13, these insects were applied to a patient (case No. 1–M) in the thirteenth day of a well-marked attack and 15 of the insects fed. At 11.30 a. m., November 14, 12 of the 17 lice were still living. Both the living and the dead, 17 in all, were, as above recited, crushed and injected into rhesus No. 306. During the progress of the experiment the insects were kept at room temperature (14° to 24° C.).

On the following day, November 15, 23 lice of group No. 2–M, after being crushed and rubbed up as were those of group No. 1–M, were subcutaneously injected into the same monkey—rhesus No. 306. The lice of group No. 2–M were collected from the hair clipped from the scalp of a patient (case No. 5–M) in the eighth day of a well-marked attack of typhus at the time of admission to the typhus pavilion, namely, about 3.30 p. m., November 14, 1911. These head lice were kept at air temperature (14° to 24° C.) until 11.30 a. m. of the next day, when 13 were found alive and 10 dead. At this time, at least 20 hours from the last possible feed, these lice, both living and dead, were crushed and subcutaneously injected into rhesus No. 306. Following this injection there was practically no local reaction, but the temperature of the animal rose rapidly (see chart No. 2), reaching 41.1° C. on November 16. It dropped with equal rapidity to normal, where it remained until November 21. In the afternoon of this day, or 7 days after the first and 6 days after the second injection, the temperature of the animal again rose and remained elevated for 7 days. At the end of this period it declined rapidly to normal, where it has remained.

An attempt at passage from the monkey was made on November 23, about 48 hours after the second rise in temperature. Blood was aspirated from the heart, at once defibrinated, and 3 c. c. injected intravenously into rhesus No. 314, a fresh monkey; but during a subsequent period of 29 days this animal gave no evidence of a reaction. This failure to effect passage made it necessary to subject rhesus No. 306 to an immunity test in order to determine definitely the nature of the febrile reaction following the above inoculation with head lice.

On December 29, therefore, rhesus No. 306 was given an intraperitoneal injection of 6 c. c. of defibrinated blood from case No. 35–M, diluted with an equal volume of saline solution. Three days later the animal was given an additional intraperitoneal injection of 4 c. c. of defibrinated blood of case No. 39–M, likewise diluted with an equal volume of saline solution. Following these inoculations the temperature of the monkey has remained normal, though two others (rhesus Nos. 324 and 304) inoculated with identical quantities of the same specimens of blood on the same dates have given prompt and sharp febrile reactions, testifying to the virulence of at least one of the specimens used for their inoculation.

We conclude, therefore, that the febrile reaction beginning November 21 suffered by rhesus No. 306 was due to infection with the typhus virus in the bodies of the head lice with which it was inoculated.

Although the typhus virus may retain its virulence in the body of the head louse for at least 20 to 24 hours, as shown in the foregoing experiment, it does not necessarily follow, though strongly suggested, that this louse is capable of transmitting the disease in the normal way, namely, by biting. The following experiments with head lice were made, therefore, to test this point:

Experiment No. 8.—On November 16, 1911, at 12 m., 25 head lice of group No. 3 were applied to the shaved belly of rhesus No. 302 and 15 of them fed. At 4.30 p. m. this group of lice was reapplied and again 15 fed. After this the lice were applied to rhesus No. 302 twice daily in rapidly diminishing numbers till November 19, in the afternoon of which date a solitary survivor was given its last feed.

The lice of group No. 3–M were head lice collected from the heads of 3 typhus patients (cases 6–M, 7–M, and 8–M) in the afternoon of November 15, at the time of their admission to the typhus ward of the Hospital General, Mexico City. From the time they were collected these insects were kept at room temperature (about 14° to 22° C.).

In addition to the foregoing rhesus No. 302 was subjected to the bites of two lice constituting group No. 4–M in the forenoon and afternoon of November 18. Thereafter, twice daily, a single survivor of this group was applied until the morning of November 20, when this insect obtained its final feed. The two lice constituting group No. 4–M were obtained from the hair of the head of case No. 9–M at about 3 p. m. of November 17 on admission to the typhus ward. Two hours later they were reapplied to this patient and both fed. Following this they were kept at room temperature (about 14° to 22° C.).

During a period of observation of 30 days subsequent to the last inoculation by the bite of the survivor of lice group No. 4–M rhesus No. 302 gave no appreciable reaction. On December 22, or 32 days after being last bitten, this monkey was subjected to an immunity test by receiving an intraperitoneal injection of 4.5 c. c. of defibrinated blood of case No. 26–M, diluted with an equal volume of normal saline solution. At the same time and with some of the same blood, monkeys Nos. 314, 315, and 316 were similarly inoculated, Nos. 314 and 316 each receiving 4.5 c. c. and No. 315, 5 c. c., likewise diluted with equal volumes of saline solution. Of these 4 animals No. 302 was much the smallest, No. 315 very much the largest, while Nos. 314 and 316 were intermediate in size between Nos. 302 and 315. It follows, therefore, that although Nos. 314 and 316 received the same amount of blood as No. 302 and No. 315 about 0.5 c. c. more, rhesus No. 302 actually received a relatively larger dose. Nevertheless, rhesus No. 302 is the only one of the 4 animals that failed to give any evidence of a reaction (see charts Nos. 3, 4, 5, and 6). Rhesus No. 314 gave a prompt and well-marked reaction. This animal, it will be recalled, was previously used for the unsuccessful attempt at passage from rhesus No. 306. Rhesus No. 315 presented a well-defined but mild reaction, while No. 316 gave indications of a brief abortive reaction that was at its height (40° C.) on the tenth day after inoculation. Both these animals had been subjected to a previous inoculation with typhus fever blood, each having received an intravenous inoculation of 2.5 c. c. of defibrinated blood from a patient (case No. 16–M) in the eleventh day of a sharp attack and when the fever was already falling.

The foregoing test would indicate, therefore, that rhesus No. 302 had developed a resistance to infection with virulent typhus blood as the result of having been bitten by head lice of groups Nos. 3–M and 4–M.

On account of the importance of the question involved it was thought desirable to give rhesus No. 302 a second immunity test. Accordingly on February 1, having been returned to the Hygienic Laboratory, he was given an intravenous injection of 2.5 c. c. of typhus blood (New York virus). At the same time rhesus Nos. 315 and 316 that had served as controls in the previous test were similarly inoculated. Following this inoculation none of these animals gave any appreciable evidence of reaction, although two other monkeys, Nos. 198 and 322, inoculated at the same time, reacted promptly and sharply, testifying to the virulence of the blood used for the test. The result of this test is in harmony with and confirms the result of the previous one and therefore strengthens the conclusion that the resistance of rhesus No. 302 to the immunity test was due to the bites of the head lice to which he was previously subjected.

Experiment No. 9.—Shortly after the lice-feedings on rhesus No. 302 had terminated, a series of feedings with lice of group No. 5–M and group No. 6–M were begun on rhesus No. 304. The lice constituting these groups were obtained from the hair clipped from the scalp of case No. 11–M and of case No. 12–M November 20, 1911, on admission to the typhus ward. One portion of these lice (group No. 5–M) was applied about 24 hours later to rhesus No. 304, 54 of the insects feeding. Thereafter they were applied daily in rapidly diminishing numbers until the morning of November 26, when a single survivor was given its last feed.

Another portion, 18 in all, of the head lice from cases No. 11–M and No. 12–M (group No. 6–M) were reapplied to case No. 11–M on November 21, or about 24 hours after they were isolated. On the succeeding day they were applied to the monkey and thereafter were applied twice daily in diminishing numbers until the afternoon of November 26, when a single survivor of the group obtained its last feed. Throughout the experiment the lice were kept at room temperature (about 14° to 24° C.). During a period of observation of 32 days following the last exposure to the bites of groups Nos. 5–M and 6–M this animal gave no indication of a reaction. On December 29, or 33 days after the last exposure, this animal was given an intraperitoneal injection of 6 c. c. of defibrinated blood of case No. 35–M diluted with an equal volume of saline solution. Three days later rhesus No. 304 received an additional intraperitoneal injection of 4 c. c. of defibrinated blood from case No. 39–M, also diluted with an equal volume of saline solution. Following this inoculation the animal very promptly developed a sharp reaction of 10 to 11 days' duration. The result of this immunity test indicates that the repeated bites of the head lice of groups Nos. 5–M and 6–M failed to confer any resistance to a subsequent inoculation with virulent typhus blood.

Experiment No. 10.—In this experiment two groups of head lice (Nos. 15–M and 17–M) were repeatedly applied and allowed to feed on rhesus No. 322. Group No. 15–M was isolated in the afternoon of December 19, 1911, from the hair clipped from the scalp of case No. 26–M, a patient in the ninth day of an attack of typhus fever. They were kept until the following day at room temperature (14° to 22° C.). At 12.45 p. m. December 20 they were applied to case No. 27–M, a patient in the twelfth day of an attack of typhus. About 3 hours and 20 minutes later these lice, 37 in all, were for the first time applied and allowed to feed on rhesus No. 322. After this they were applied twice daily in rapidly diminishing numbers until December 26, when only 2 survivors remained.

Group No. 17–M was isolated from the hair clipped from the scalp of case No. 28–M, a patient in the tenth day of an attack of typhus, in the afternoon of December 20, 1911. At 11.30 a. m. of the following day these lice were reapplied to case No. 28–M, now in the eleventh day. Four hours later they were applied for the first time to rhesus No. 322, 15 feeding on this occasion. Thereafter, these lice were applied twice daily in rapidly diminishing numbers until December 16, when only 2 survivors remained. Throughout the experiment the lice were kept at room temperature (about 14° to 22° C.).

During a subsequent period of 25 days this animal gave no indication of a reaction. Thirty days after the final application of the lice, namely, on February 1, 1912, this monkey was given an immunity test consisting of an intravenous inoculation of 2.5 c. c. of defibrinated blood of rhesus No. 184 (New York virus). After an incubation period of 8 days this monkey developed a sharp reaction, indicating that the lice had failed to transmit the infection and confer immunity.

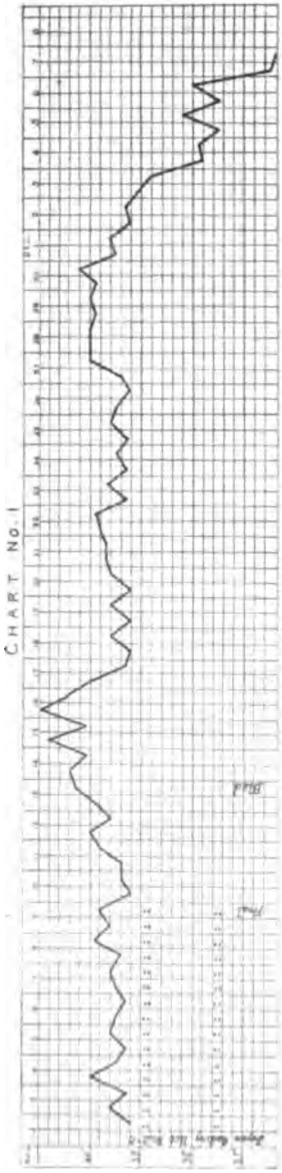

CHART No. 1. Temperature curve of rhesus No. 165, Infected by bites of body lice No. 2-N.

SUMMARY.

I.

(*a*) In one of two attempts to transmit typhus fever (New York virus—Brill's disease) from monkey to monkey by means of the bite of the body louse (*Pediculus vestimenti*) the monkey bitten by the presumably infected lice developed a fever of short duration followed by a relapse and later progressive emaciation, and death, with no macroscopic lesions at necropsy.

CHART NO 2

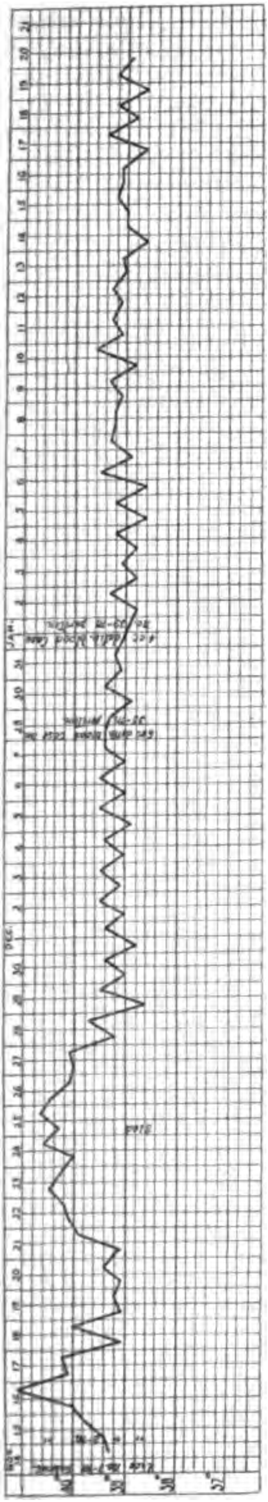

CHART No. 2.—Temperature curve of rhesus No. 306 after inoculation by subcutaneous injection of head lice No. 1-M and No. 2-M, and after immunity test.

CHART NO 3

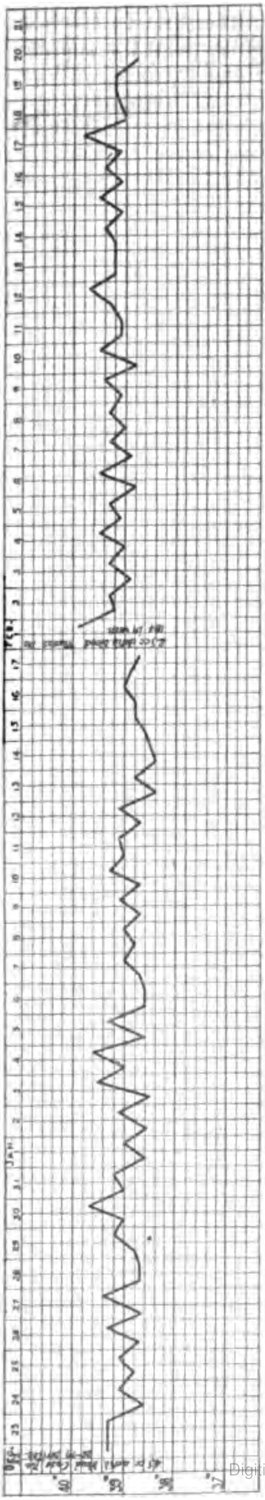

CHART No. 3.—Temperature curve of rhesus No. 302 after the first and the second immunity tests.

(*b*) Two attempts to transmit typhus fever (New York virus) from monkey to monkey by means of subcutaneous injections of suspensions of chloroformized and crushed lice resulted negatively.

(*c*) In one of two attempts to transmit typhus fever (Mexican virus) from man to monkey by means of subcutaneous injection of a saline suspension of crushed body lice, the monkey so inoculated has resisted two subsequent inoculations with virulent typhus blood (New York virus).

CHART NO. 4

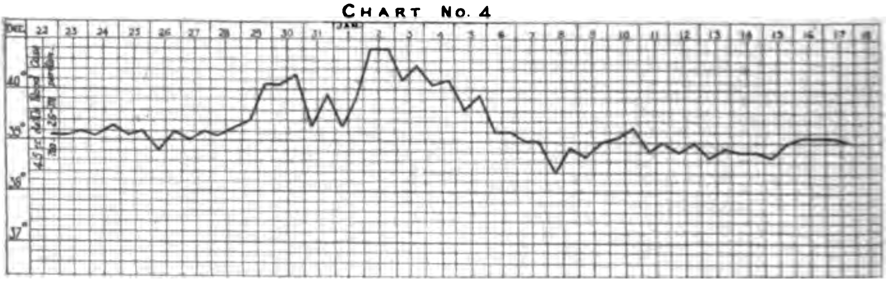

CHART No. 4.—Temperature curve of rhesus No. 314 following immunity test; control on rhesus No. 302.

CHART NO. 5

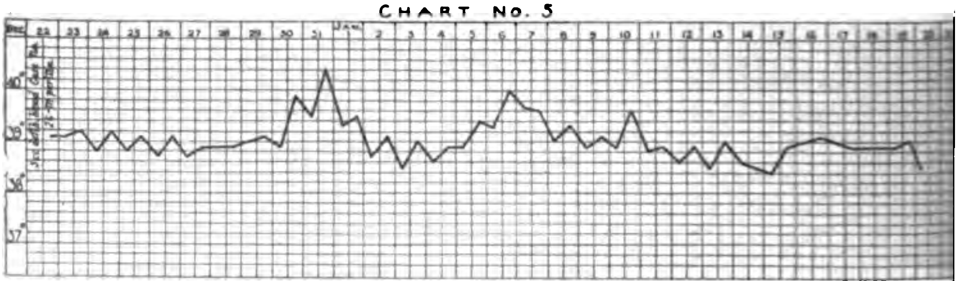

CHART No. 5.—Temperatute curve of rhesus No. 315 following immunity test; control on rhesus No. 302

CHART NO 6

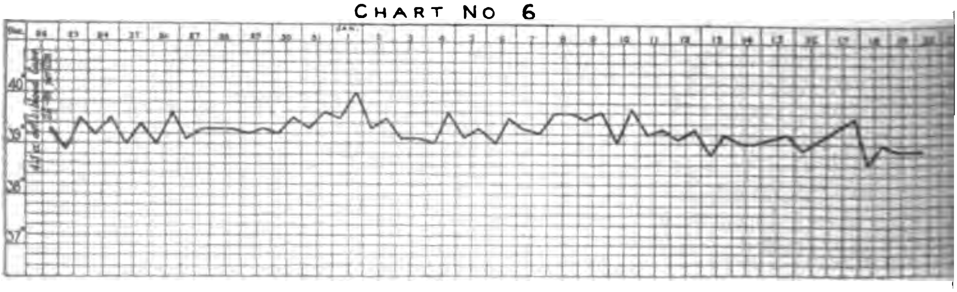

CHART No. 6.—Temperature curve of rhesus No. 316 following immunity test; control on rhesus No. 302

The foregoing results are in harmony with and confirm those reported by previous workers.

II.

In this paper we present the first evidence incriminating any insect other than the body louse as an intermediary in the transmission of typhus fever:

(*a*) In an attempt to transmit typhus fever (Mexican virus) from man to monkey by subcutaneous injection of a saline suspension of crushed head lice (*Pediculus capitis*), the monkey developed a typical febrile reaction with subsequent resistance to an inoculation of virulent typhus (Mexican) blood.

(*b*) In one of three experiments to transmit typhus fever (Mexican) from man to monkey by means of the bite of the head louse (*Pediculus capitis*), the animal bitten by the presumably infected head lice proved resistant to two successive immunity tests with virulent typhus blood.

CONCLUSIONS.

1. The body louse (*Pediculus vestimenti*) may become infected with typhus. The virus is contained in the body of the infected louse and is transmissible by subcutaneous injection of the crushed insect or by its bite.
2. The head louse (*Pediculus capitis*) may become infected with typhus. The virus is contained in the body of the infected louse and may be transmitted by subcutaneous injection of the crushed insect and, we believe, also by its bite.

ACKNOWLEDGMENTS.

We desire to renew our acknowledgments of indebtedness to Drs. Nathan E. Brill and Leo Kessel, of New York City, and to Dr. Leon Louria, of Brooklyn, for cases of Brill's disease; to Dr. Eduardo Licéaga, president, and Dr. Octaviano Gonzalez Fabela, director of the bacteriological laboratory of the Superior Board of Health of Mexico; to Dr. Regino Gonzalez, director of the Hospital General; Dr. German Diaz Lombardo, director of the Hospital Juarez, and Drs. Miguel Otero and Zenon Luna, for laboratory and clinical facilities; for many valuable courtesies to Dr. A. R. Goodman, chief surgeon of the national railways of Mexico, and Drs. Genaro Escalona, Felipe Perez Garza, J. R. Davis, and Señor Salvador Aguirre.

SCHOOL CLOSURE IN THE CONTROL OF EPIDEMICS OF MEASLES.

The control of outbreaks of measles has usually been found difficult. This has been so to such an extent that in many cities no attempt at control is made. Under these circumstances the disease very probably subsides only after it has attacked a considerable proportion of the susceptible children and remains in a state of relative inactivity until a sufficient number of other children reach an age when their relation to the community life makes them available material for a new epidemic.

Studies of outbreaks of measles and of the effect of measures aimed at their control are of special interest to municipal health authorities. Dr. Raffle, school medical officer of South Shields, England, reported in the Lancet (London) of February 3, 1912, an outbreak of measles in which the closing of the schools seemed to have a decided limiting effect on the spread of the infection. The following is the report:

SCHOOL CLOSURE IN MEASLES.

To those working on the preventive side of medicine school closure as a means of controlling epidemics is always an interesting question. Opinions differ as to its efficacy even amongst medical men, and the present article is an account of how it worked in an epidemic of measles. Laymen, especially members of education committees, often meet our arguments in favor of school closure with the retort that the children are just as liable to be infected in their home life as they are to be infected in school. The intercourse in the home, the street, the Sunday school, and places of amusement plays, of course, its part in the spread of infectious disease, but I hope to show that in the epidemic which is here considered it was a minor part.

During the spring and early summer of last year we had to control an extensive epidemic of measles, which affected 15 out of 21 of our infant schools. There were 858 children attacked, and each of the cases has been investigated for the purpose of a special report to be included in the annual report for 1911. I have analyzed the figures of incidence in each school in the hope that other school medical officers will follow my example and give the profession figures of proof of the efficacy of school closure. The accompanying table shows the departments affected, the extent to which they were closed, the rough average attendance of the department, the number of children who had not already had measles (from figures obtained during three years of medical inspection), the number of cases occurring before closure, the number occurring within 14 days of closure, and the number which occurred more than 14 days after the closure.

Table showing the influence of school closure in an epidemic of measles.

Name of school.	Extent of closure.	Average attendance.	Number of susceptible children.	Number of cases before closure.	Number of cases within 14 days after.	Number of cases more than 14 days after.
Westoe	All	480	240	77	27	17
Ocean Road	do	380	190	51	16	7
St. Hilda's	do	170	80	19	1	2
St. Stephen's	do	175	80	18	0	5
Gilbert Street	do	400	200	71	28	20
Barnes	do	440	210	37	8	0
Baring Street	do	450	220	49	16	1
Mortimer Road	do	520	250	76	18	3
W. Harton	do	200	100	28	6	1
Cone Street	do	310	150	22	1	8
H. Trinity	do	345	170	51	10	6
Laygate Lane	Classes 5, 7, and 8	150	70	21	0	2
St. Bede's	Classes 6 and 7	100	40	28	1	2
Stanhope Road	Class N 2	50	20	22	0	0
Mowbray	Classes 7, 8, 9, 9A, and 10.	300	160	48	8	1
Total		4,470	2,180	618	140	75

We must take into account, as I have already said, both the infection which may be present in the home life and that in the school life. If we eliminate one of these sources of infection we can then ascertain the part played by the other in spreading the disease, providing that we have remaining, after one source has ceased to act, a large number of susceptible children. During the period that a child is at school both sources of infection are in operation, and for a period of 14 days after the child is excluded it is still possible that the child was infected at school and has been carrying the undeveloped disease in its system. After the maximum period of incubation has expired all cases occurring amongst the children must be the result of infection in the home life.

There were in this epidemic 4,470 children exposed to infection, and of these 2,180 were susceptible to measles. Of these, 853 children were attacked, 638 cases occurring during the time that the children were at school and 140 during a period of 14 days after the school was closed; that is, 778 cases which might have been infected either at school or in the home life. Thus, at the time of the removal of the possibility of the infection at school there were still more than 1,400 children who were susceptible to measles. Only 75 of these children actually contracted the disease. This shows, I think, the important part played by the school in the spread of the infection of measles and the value of school closure in this epidemic as a preventive measure.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

FARGO, N. DAK.

COMMUNICABLE DISEASES—NOTIFICATION, QUARANTINE, ISOLATION, DISINFECTION, SCHOOL ATTENDANCE OF CASES, AND CONTACTS.

SECTION 1.—*Report of cases.*

A.—All contagious and infectious diseases to be reported to the health officer.

1. Every physician who attends any person in the city of Fargo affected with scarlet fever, smallpox, diphtheria, measles, typhoid fever, pulmonary tuberculosis, anterior poliomyelitis, epidemic cerebro-spinal meningitis, chicken pox, whooping cough, or mumps shall report the same within 24 hours from the time of such attendance to the health officer, in writing, on cards furnished by the health department, giving the name of the disease, the name, age, sex, and color of patient, and the number and name of the street, or shall otherwise designate the location of the house or dwelling place where such patient may be found. A report by telephone shall be required in addition in the case of persons affected with scarlet fever, diphtheria, or smallpox.

2. In the absence or disability of any physician in attendance on such case, or in default of such physician, the head of the family or some other member of the family to which the patient belongs, shall make a report as specified in paragraph 1.

3. Hotel and boarding-house keepers, managers of public or private institutions, and teachers in public and private schools, and, finally, any person who is aware of the existence of any of the diseases enumerated, where there is no physician in attendance, or where the case has not been reported, shall make a report of the same to the health officer, as specified in paragraph 1 of this section.

B.—Separate reports required for each case.

1. Every physician or other person as specified in section 1 shall make separate reports for each and every case occurring in the same family or in the same dwelling place.

C.—Suspected cases to be reported.

1. Any physician who attends any person whom he suspects of being ill of any of the diseases enumerated in section 1, but on whom he is not able to make a positive diagnosis at the time of the first visit, shall report the same to the health officer as a suspicious case, on the card furnished by the health department. Such a case will not be placarded unless a warranting diagnosis is later established. When the diagnosis is established, the physician shall immediately notify the health officer. In suspected cases the physician in attendance shall inform the family and others living in the same dwelling place as the patient, of the probable nature of the disease, and shall instruct them in the maintenance of the same precautions which are prescribed when the diagnosis is positive.

D.—Death or recovery from contagious disease to be reported to the health officer.

1. When any person ill of any contagious disease recovers or dies the attending physician shall at once notify the health officer. In the case of the death of the patient, the report shall be made in writing on blanks provided for that purpose. But no person shall certify knowingly or negligently that any person has recovered from any disease aforesaid until such patient is in such condition as to be free from danger of communicating the disease to other persons.

SECTION II.—*Quarantine and isolation.*

A.—Quarantine to be established in certain cases.

1. Immediately upon receiving notice of the existence of any of the diseases enumerated in section 1 the health officer shall investigate the same and shall take such measures as hereinafter provided to prevent the spreading of such disease.

2. The health officer shall remove or cause to be removed any patient affected with scarlet fever, diphtheria, smallpox, or epidemic cerebro-spinal meningitis to the city quarantine hospital, or shall establish, or cause to be established, proper quarantine at the dwelling place of the person so affected, provided that house quarantine can be carried out without danger to the general public.

3. The expenses of hospital quarantine shall be borne by the patient when the patient is able to pay them, otherwise the expenses shall be borne by the city in accordance with section 23 of the Revised Ordinances of the City of Fargo.

4. In cases of house quarantine a warning card shall be so displayed on the front and rear entrances that anyone coming to either door will be warned of the presence of the disease within.

5. No person who has been in contact with a person having any of the above-named diseases, excepting the attending physician or a health officer, shall leave the premises or come in contact with anyone other than the patient unless properly disinfected, and permitted to do so by the health officer.

6. The members of the family who work out must either (*a*) board and room at another house, or (*b*) stop work and stay in the house.

7. The health officer may after personal investigation of the premises wherein a contagious case or cases exist, issue a written permit to wage earners to enter and leave the premises during the period of quarantine, providing that he finds that such a modification of quarantine will not endanger the public health. Neither this nor any other modification of quarantine will be permitted excepting with the written consent of the health officer, and no modification of quarantine will be allowed in the case of any wage earner who is engaged in the production, sale or manufacture of wearing apparel, bedding, foodstuffs, cigars, cigarettes, or candy. If he is so employed he shall be required to take a disinfecting bath and put on disinfected clothing and leave the premises.

8. Milkmen must empty milk delivered to infected premises into covered containers placed outside the door of such premises. They must not enter such premises nor remove milk bottles therefrom until the house has been fumigated and the bottles have been sterilized. If bottles are delivered they must not be taken from the house until the case is terminated and the bottles have been sterilized.

9. Grocerymen and other persons delivering merchandise are forbidden to enter such premises or remove packages therefrom.

10. Laundrymen are forbidden to enter such premises or to remove any clothing therefrom until such articles have first been boiled or otherwise sterilized.

11. No one shall remove anything from such premises except by permission of the health officer.

No one shall enter any infected portion of such premises except physicians and health inspectors except by permission of the health officer.

12. No cat, dog, or other household domestic animal shall be allowed to run in and out of the house during the quarantine period. These animals must be either kept inside or tied up outside, or kept away from the premises altogether. If such animals are kept in the house during the quarantine period they must be disinfected before they are allowed to run loose.

13. Representatives of the health department shall visit the premises from time to time as they see fit to observe the efficiency of quarantine, and for such purposes shall have the right of entry at any time.

14. Cases which can not or do not comply with the above requirements will be taken to the hospital.

15. It shall be the duty of the attending physician to instruct those dwelling in the same house as the patient of the provisions of the ordinance and of the meaning of quarantine.

16. The health department shall issue to each family in quarantine a circular setting forth in simple language the rules of quarantine and the rules to be observed in the care of these cases.

17. The period of quarantine will be reckoned from the date on which the case is reported to the health officer, or from the day on which the first symptoms appeared Provided, that the attending physician certifies to this fact in writing to the health officer.

18. The minimum period of quarantine in cases of scarlet fever shall be 30 days with such additional time as may be necessary for the complete recovery of the case. No case under any circumstances shall be released until desquamation has absolutely and entirely ceased and until all nose and ear discharges have healed.

19. The minimum period of quarantine for cases of diphtheria shall be 14 days excepting where two successive negative cultures are made on two successive days, when the minimum period shall be seven days, provided that antitoxin has been used.

20. The minimum period of quarantine in cases of smallpox shall be 20 days with such additional time as is necessary for the complete recovery of the case. No patient shall be discharged until desquamation has entirely ceased.

21. The minimum period of quarantine for cases of epidemic cerebrospinal meningitis shall be 14 days with such additional time as is necessary for the complete recovery of the case.

B.—Isolation required in certain contagious diseases.

1. Patients affected with measles, mumps, whooping cough, chicken pox, or anterior poliomyelitis will be isolated at home, and those living in the same premises who are not affected with the disease will be permitted to leave the premises to attend to their regular duties, except when such individuals are associated with children away from the quarantined house. Provided further, that the health officer shall give notice to the public by placing a placard with the name of the disease in a conspicuous place on the building as in quarantine. If these regulations are not complied with to the satisfaction of the health officer, the patient and other occupants of the house shall be placed under strict quarantine, as described in section II A of these regulations.

2. The minimum period of isolation in cases of measles shall be 21 days, with such additional time as is necessary for the complete recovery of the case.

3. Cases of whooping cough shall be isolated until paroxysmal cough has entirely ceased.

4. Cases of mumps shall be isolated at least 21 days or until all swelling has subsided.

5. Cases of chicken pox shall be isolated at least 21 days or until the skin is clean and free from infection.

6. Cases of anterior poliomyelitis shall be isolated at least 14 days or until recovery is complete.

SECTION III.—*Disinfection and fumigation.*

A.—Health officer to terminate quarantine and isolation.

1. Upon receipt of notice from the attending physician of the complete recovery of any person affected with any of the aforesaid diseases, the health officer shall terminate the quarantine or isolation. Provided, that the minimum period of quarantine or isolation as set forth in section II has elapsed. He shall remove the placard and shall cause the premises to be fumigated and the patient and attendants to be disinfected in such manner as provided by the board of health.

2. The fumigation of premises shall be done only by an inspector of the board of health and under the supervision of the health department. The expense of fumigation shall be borne by the patient when the patient is able to pay, otherwise the expense shall be borne by the city. The maximum expense of fumigating shall be $5, except in the case of public buildings when the expense shall be determined by the capacity to be fumigated. The health inspector shall make a monthly report to the board of health stating the number and location of the premises fumigated, and shall render an account of all money received from this source. The health inspector shall receive as compensation for his services 50 per cent of the receipts from fumigating and the balance shall be turned over by him to the board of health to provide the materials and to pay such other expenses as are incurred in doing this work.

SECTION IV.—*Exclusion of children from school.*

A.—Health officer to report cases of contagious disease to the superintendent of schools.

1. The health officer shall make a daily report to the superintendent of schools, giving the names and addresses of all contagious cases reported to him in the previous 24 hours.

2. When any child is taken from any school building ill with a contagious disease, the room from which the child was taken shall be fumigated within 12 hours.

B.—*Children readmitted to school when.*

1. Children affected with any of the following diseases will be given certificates by the health officer recommending admission to school as follows:
Scarlet fever, 10 days after quarantine is terminated.
Diphtheria, at the termination of quarantine.
Smallpox, 15 days after quarantine is terminated.
Epidemic cerebrospinal meningitis, when recovery is complete.
Measles, at the termination of isolation.
Chicken pox, at the termination of isolation.
Whooping cough, 15 days after paroxysmal cough has ceased.
Mumps, 10 days after all swelling has subsided.
Anterior poliomyelitis, when recovery is complete.

C.—*Contacts residing in the same dwelling place as the patient to be excluded from school.*

1. No child or other person residing in the same premises as the patient shall be permitted to attend any public, private, Sunday, or sectarian school, and teachers of public and private schools are hereby required to exclude any and all such children from said schools until the expiration of the quarantine period or the isolation period for the last person in the premises so affected; provided, the person or persons so affected have been properly isolated during the quarantine period. Otherwise the exclusion for contacts shall continue for the following periods:
Scarlet fever, 7 days.
Diphtheria, 7 days.
Smallpox, 14 days (unless vaccinated).
Epidemic cerebrospinal meningitis, 14 days.
Measles, 14 days.
Chicken pox, 14 days.
Whooping cough, 14 days.
Mumps, 14 days.
Anterior poliomyelitis, 14 days.

D.—*Contacts residing in a dwelling place other than that of the patient to be excluded from school.*

1. Any child residing in the same premises where an outbreak of any of the contagious diseases enumerated occurs, at the time of the outbreak may be allowed after taking a disinfecting bath and putting on disinfected clothing to remove therefrom and take up his or her residence in other premises occupied exclusively by adults, and, providing the disease has not been contracted at the end of the periods here specified, will be given a certificate by the health officer recommending readmission to school:
Scarlet fever and diphtheria, each 7 days.
Smallpox, epidemic cerebrospinal meningitis, measles, chicken pox, whooping cough, mumps, and anterior poliomyelitis, each 14 days.

SECTION V.—*Transportation of cases.*

Infected persons shall not move about or be moved about in the city or expose themselves in such manner as to endanger the general public. Cases shall be transported only by the conveyance of the health department except by special permission of the health officer. Patients transported to the city quarantine hospital in the city carriage may be accompanied by a nurse or other attendant if there be need of such an attendant, but such attendant shall, before leaving the city quarantine hospital, take a disinfecting bath and put on disinfected clothing and comply with such other rules as are directed by the board of health.

SECTION VI.—*Precautions to be taken by those attending patients affected with contagious diseases.*

1. Every person in attendance upon a case of contagious disease shall exercise due precaution to prevent the transmission of the disease.

2. Nurses who have been caring for a case of contagious disease shall, upon the termination of quarantine, take a disinfecting bath and shampoo, and shall put on disinfected clothing, and shall not enter upon the duties of another case for at least two days following such disinfection. During this time they are advised to keep in the open air as much of the time as possible.

SECTION VII.—*Health board to have power to act.*

The health officer and the board of health shall have the power to make such special regulations for the prevention and control of contagious diseases as they from time to time find necessary.

SECTION VIII.—*Previous regulations revoked.*

All previous regulations of the board of health for the management of contagious diseases are hereby revoked.

SECTION IX.

These regulations shall take effect on their passage.

SECTION X.—*Penalties.*

[Sec. 26, Revised Ordinances of the city of Fargo.]

Penalty for disobeying quarantine rules.

Any person whomsoever who shall violate any clause, provision, or requirement, duty or regulation of this chapter or of any rules or regulations of the said health officer, physician or person in charge of any quarantine, or who shall fail or neglect to comply with any such rules, provisions, requirements, duty or orders, or who shall interfere with or in any manner resist any officer or agent of the city in the discharge of his duty as herein contemplated or who shall commit any breach of the peace, or be guilty of any act, or thing calculated to defeat or interrupt the carrying into effect any part of this chapter or any regulation of the board of health, shall, on conviction, be liable to the penalty hereinafter provided.

Penalty for violation of ordinance.

[Sec. 94, Revised Ordinances of the city of Fargo.]

That any person who violates, disobeys, neglects or refuses to comply with, or who resists any of the provisions of this ordinance, or who refuses or neglects to obey any of the rules, orders or sanitary regulations of the board of health, or who omits, neglects, or refuses to comply with, or who resists the city scavenger or any of his assistants, or any officer or order, or special regulation of the board of health, scavenger or assistant scavenger, shall, upon arrest and conviction, be subject to a fine of not more than $15, or imprisonment in the city jail not exceeding 10 days, or both, at the discretion of the court, for each and every offense.

[Regulation, Board of Health, adopted Nov. 6, 1911.]

FREEPORT, ILL.

COMMUNICABLE DISEASES—SCHOOL ATTENDANCE OF CASES AND CONTACTS, PLACARDS, DISINFECTION, FUNERALS AND BURIAL, QUARANTINE.

SEC. 1. (*a*) That no child be allowed to attend school from any household in which there is or has been a case of scarlet fever, for a period of six weeks from the commencement of the last case in the household (except as provided in paragraph (*d*) of this section) and until a certificate has been presented from the health officer that all danger of conveying the disease by such child is passed.

(*b*) That no child who has visited a house in which there was at the time a case of scarlet fever, shall attend school until the expiration of two weeks following exposure, unless he has already had that disease.

(*c*) That no child who has diphtheria be allowed to attend school for a period of one week from the date of the second successive negative bacteriological culture from both nose and throat (except as provided under paragraph (*d*) of this section) and until a certificate has been presented from the attending physician to the health officer, that all danger of conveying the disease by such child is passed; and that no well child be allowed to attend school from any household in which there is, or has been, a case of diphtheria, until the same precautions have been taken, with the exception that but one negative bacteriological culture, from both nose and throat, is required.

(*d*) That the health officer or health committee may, if circumstances warrant, give to children or adults not infected in the household in which there is or has been scarlet fever or diphtheria, a special permit to return to school or work as soon as said officer or committee considers it safe for them to do so.

(*e*) That no child from any house where there is a case of scarlet fever or diphtheria, shall be allowed to mingle with persons from any other house, until after the removal, recovery or death of the patient, and the disinfection of the premises.

(*f*) That every house infected with diphtheria, scarlet fever, smallpox, measles, typhoid fever, German measles, cerebrospinal meningitis or membranous croup, shall have affixed on or near the front and rear doors a card, furnished by the health officer stating the disease to be avoided; and any unauthorized person removing such card, shall be liable to a fine of not exceeding $100.

SEC. 2. That no child who has chickenpox, or German measles, be allowed to attend school until a period of two weeks has elapsed from the first appearance of the eruption, and until a certificate to that effect is presented by the patient or attending physician.

SEC. 3. That no child found to be ill with consumption, and a menace to the health of others, be allowed to continue in school.

SEC. 4. That no child who has mumps be allowed to attend school until a period of two weeks has elapsed from the first signs or symptoms of the disease, and until a certificate to that effect from the patient or attending physician has been presented to the health officer.

SEC. 5. That no child who has measles be allowed to attend school until a period of two weeks has elapsed from the first appearance of the eruption and until a certificate to that effect from the parent or attending physician has been presented; and that no child in a household in which there is a case of measles shall be allowed to attend school within two weeks from the appearance of the rash in the last case in such household, without a certificate from the parent stating that such child has already had the disease.

SEC. 6. That no child with whooping cough be allowed to attend school until a period of eight weeks has elapsed from the beginning of the cough, and until a certificate to that effect from the parent has been presented; and that no child in a household in which there is a case of whooping cough shall be allowed to attend school within eight weeks from the beginning of the cough in the last case in such household without a certificate from the parent stating that such child has already had the disease.

SEC. 7. That no child be allowed to attend school from any household in which there is or has been a case of cerebrospinal meningitis, until a certificate has been presented from the health officer.

SEC. 8. That no child be allowed to attend school from any household where there is or has been a case of follicular tonsillitis for a period of two weeks from the time the first symptoms of the last case, or until a certificate has been presented by the parent or attending physician.

SEC. 9. That no child having infantile paralysis or having been exposed to said disease be permitted to attend school until a period of four weeks has elapsed from the first symptoms of the disease or from the time of such exposure, as the case may be.

Sec. 10. That no child who has membranous croup be allowed to attend school for a period of one week from the date of the second successive negative bacteriological culture from both nose and throat (except as provided under paragraph (*d*) of sec. 1 hereof), and until a certificate has been presented from the attending physician to the health officer that all danger of conveying the disease by such child has passed; and that no well child be allowed to attend school from any household in which there is, or has been, a case of membranous croup, until the same precautions have been taken, with the exception that but one negative bacteriological culture from both nose and throat is required.

SEC. 11. That no child be allowed to attend school from any household in which there has been a case of typhoid fever until two weeks after the termination of the last case in the household, except in a case where the patient has been removed to a hospital, and until a certificate has been presented from the committee on health or health officer that all danger of conveying the disease by such child is passed.

SEC. 12. That such rooms and such articles in any house as in the opinion of the health officer have been subjected to infection or contagion from smallpox, scarlet fever, diphtheria, cerebrospinal meningitis, or consumption shall be disinfected by such officer. The attending physician or the health officer shall decide in each case as to the proper time for disinfecting; but in no case of scarlet fever shall disinfection be done in less than four weeks from the commencement of the last case in the household (except by special permit of the health committee), and in diphtheria disinfection shall not be done until after at least two successive negative bacteriological cultures, both from the nose and throat, have been obtained; and in all cases a certificate of the attending physician shall be required, stating that all danger of infection from the patient has passed; said certificate in case of diphtheria to be based on the result of the bacteriological examinations as above prescribed. Disinfection shall also be done in every case after a death from consumption, and after the removal of a consumptive patient, whenever in the oponion of the health officer or of the agent of the health committee disinfection is necessary.

Sec. 13. That no public funeral shall be held over the remains of any person who has died of smallpox, scarlet fever, or diphtheria, or cerebrospinal meningitis without the written permit of the health officer and under such regulations as may prevent the spread of either of said diseases. Ordered further, that the remains of any person who has died from either of said diseases shall at once be placed in a tight or sealed coffin, and shall not thereafter be exposed to view or disturbed except for burial.

Sec. 14. That the undertakers of the city be notified to warn families in the case of the death of a member from a contagious disease against a public funeral, and no undertaker shall conduct a funeral in violation of the terms thereof.

Sec. 15. That no person infected with diphtheria, membranous croup, or scarlet fever shall leave the house or home until the health committee or health officer shall find and certify that all danger of communicating such disease has passed.

Sec. 16. That in the case of death where the deceased had not been attended by a practicing physician, the certificate of death shall be issued by the health officer.

Sec. 17. That no dead body of any person shall be carried to any cemetery, or from one place to another, in or through the city, in any public vehicle other than a hearse or undertaker's wagon provided for that purpose.

Sec. 18. That the use of "wall draperies" in any room or place used for a funeral in case the death has been caused by contagious or infectious disease, or for the preparation or retention of any such human body before or in connection with such funeral, be, and the same is hereby, forbidden.

Sec. 19. Any person violating any of the provisions of this ordinance shall be subject to a fine of not less than $5 nor more than $100 for each offense.

Sec. 20. This ordinance shall be published in the Freeport Bulletin, and shall take effect and be in force 10 days after such publication.

[Ordinance adopted Feb. 5, 1912.]

CEREBROSPINAL MENINGITIS IN TEXAS.

Surg. Guiteras, at Galveston, Tex., reports that from January 19, the date of the occurrence of the first reported case of cerebrospinal meningitis at Galveston, to February 22, a total of 34 cases, with 9 deaths, was reported in that city.

At Houston, Tex., the health officer reports the occurrence of 15 cases of cerebrospinal meningitis, with 4 deaths, during the week ended February 3, and 18 cases, with 6 deaths, during the week ended February 10.

The disease is still present at other points in the State, but reports of the number of cases occurring have not been received.

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,427 acres of land in Alameda County were covered with poison during the week ended February 10, 1912.

During the same period 5,270 acres of land in San Joaquin County and 5,930 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Feb. 10, 1912	8	[1] 167	95	....
Oakland	...do	23	[2] 676	481	....
San Francisco	...do	5	[3] 1,601	1,186	....
Counties—					
San Joaquin	...do	....	[4] 95	95	....
Washington:					
City—					
Seattle	...do	....	1,069	1,020	....

[1] Identified: Mus norvegicus, 111; Mus musculus, 56.

[2] Identified: Mus norvegicus, 522; Mus rattus, 3; Mus musculus, 149; Mus alexandrinus, 2.

[3] Identified: Mus norvegicus, 748; Mus musculus, 396; Mus rattus, 247; Mus alexandrinus, 210.

[4] Identified: Mus norvegicus, 89; Mus rattus, 1; Mus musculus, 2; Mus alexandrinus, 3.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED MAR. 1, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Illinois:				
Counties	Jan. 1-May 31	....	4	
Adams	May 1-31	11	....	
Bond	...do	9	....	
Boone	...do	5	....	
Champaign	...do	4	....	
Clinton	...do	4	....	
Cook	...do	26	....	
Crawford	...do	1	....	
Dewitt	...do	2	....	
Douglas	...do	9	....	
Ford	...do	6	....	
Fulton	...do	7	....	
Hardin	...do	7	....	
Kane	...do	23	....	
Kankakee	...do	1	....	
Lasalle	...do	1	....	
Livingston	...do	1	....	
McLean	...do	14	....	
Macon	...do	8	....	
Madison	...do	1	....	
Massac	...do	20	....	
Montgomery	...do	18	....	
Morgan	...do	10	....	
Pike	...do	8	....	
Pulaski	...do	1	....	
Randolph	...do	7	....	
Saint Clair	...do	8	....	
Saline	...do	33	....	
Sangamon	...do	4	....	
Stephenson	...do	2	....	
Tazewell	...do	20	....	
Union	...do	1	....	
Vermilion	...do	31	....	
White	...do	20	....	
Will	...do	9	....	
Winnebago	...do	4	....	
Woodford	...do	1	....	
Total for State		337	4	

SMALLPOX IN THE UNITED STATES—Continued.

Reports received during week ended Mar. 1, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Illinois—Continued.				
Counties—Continued.				
Adams	June 1-30	2		
Bond	do	4		
Champaign	do	1		
Clinton	do	6		
Cook	do	3		
Hardin	do	12		
Kane	do	4		
McHenry	do	1		
McLean	do	10		
Macon	do	1		
Massac	do	6		
Pike	do	12		
Rock Island	do	2		
Saint Clair	do	3		
Saline	do	3		
Stephenson	do	1		
Vermilion	do	22		
Wayne	do	10		
Winnebago	do	3		
Total for State		106		
Adams	July 1-31	2		
Clay	do	1		
Gallatin	do	1		
Kane	do	1		
Lake	do	1		
McDonough	do	1		
McLean	do	1		
Macoupin	do	1		
Massac	do	1		
Owen	do	1		
Rock Island	do	1		
Saline	do	2		
Vermilion	do	2		
Whiteside	do	4		
Winnebago	do	5		
Schram City	do	1		
Total for State		26		
Coles	Aug. 1-31	9		
Effingham	do	3		
Kane	do	3		
Montgomery	do	1		
Ogle	do	2		
Vermilion	do	1		
Winnebago	do	11		
Total for State		30		
Bureau	Sept. 1-30	9		
Cook	do	2		
Fayette	do	13		
Henry	do	7		
Kane	do	13		
McHenry	do	1		
Peoria	do	1		
Rock Island	do	1		
Winnebago	do	7		
Funks Grove (city)	do	1		
Total for State		55		
Bureau	Oct. 1-31	31		
Cook	do	1		
Kane	do	3		
Lasalle	do	6		
Lee	do	1		
McHenry	do	5		
Macon	do	4		
Ogle	do	16		
Peoria	do	7		
Sangamon	do	3		
Winnebago	do	2		
Total for State		79		
Bureau	Nov. 1-30	6		
Cumberland	do	1		
Dewitt	do	1		

SMALLPOX IN THE UNITED STATES—Continued.

Reports received during week ended Mar. 1, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Illinois—Continued.				
Counties—Continued				
Jasper	Nov. 1-30	1		
Kane	do	1		
Kendall	do	1		
Knox	do	1		
Lasalle	do	7		
McHenry	do	4		
Madison	do	20		
Marion	do	1		
Ogle	do	2		
Pulaski	do	1		
St. Clair	do	1		
Sangamon	do	4		
Winnebago	do	2		
Total for State		54		
Bureau	Dec. 1-31	16		
Cook	do	3		
Dewitt	do	1		
Kane	do	1		
Knox	do	2		
Lasalle	do	11		
McHenry	do	3		
Madison	do	7		
Marion	do	4		
Ogle	do	1		
Sangamon	do	4		
Stephenson	do	3		
Whiteside	do	4		
Total for State		60		
Indiana:				
Counties—				
Adams	Jan. 1-31	3		
Bartholomew	do	33		
Cass	do	3		
Clinton	do	9		
Fountain	do	12		
Hancock	do	2		
Howard	do	5		
Madison	do	2		
Marion	do	1		
Monroe	do	1		
Randolph	do	7		
St. Joseph	do	1		
Vanderburg	do	8		
Wabash	do	1		
Wayne	do	1		
Total for State		89		
Louisiana:				
New Orleans	Feb. 11-17	16		
Minnesota	Nov. 1-30		1	Cases for November, p. 2026, Vol. I.
Counties—				
Becker	Jan. 2-8	1		
Brown	Jan. 9-15	1		
Chisago	Jan. 16-22	1		
Clay	Jan. 2-29	50		
Dodge	do	14		
Hennepin	do	33		
Lac qui Parle	do	7		
Nicollet	Jan. 16-22	1		
Ottertail	Jan. 9-29	15		
Pipestone	Jan. 16-22	1		
Ramsey	Jan. 9-29	91		
Rice	Jan. 9-22	8		
St. Louis	Jan. 16-22	23		
Scott	Jan. 23-29	2		
Steele	do	1		
Swift	Jan. 16-29	8		
Wabasha	Jan. 2-15	2		
Washington	Jan. 16-23	2		
Watonwan	Jan. 9-15	20		
Winona	do	1		
Wright	Jan. 9-29	6		
Total for State		288	1	

SMALLPOX IN THE UNITED STATES—Continued.

Reports received during week ended Mar. 1, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
New York	Dec. 1-31		2	
North Carolina:				
Counties—				
Anson	Nov. 1-30	21		
Cleveland	do	4		
Davidson	do	2		
Forsyth	do	1		
Granville	do	11		
Harnett	do	1		
Iredell	do	5		
Jones	do	1		
Macon	do	1		
Madison	do	14		
New Hanover	do	1		
Northampton	do	1		
Pender	do	3		
Robeson	do	1		
Rutherford	do	1		
Scotland	do	1		
Swain	do	1		
Transylvania	do	1		
Vance	do	8		
Total for State		79		
Alleghany	Dec. 1-31	1		
Anson	do	15		
Buncombe	do	2		
Cumberland	do	2		
Durham	do	2		
Granville	do	5		
Haywood	do	42		
Johnston	do	1		
Madison	do	5		
Martin	do	1		
Mecklenburg	do	3		
New Hanover	do	1		
Robeson	do	2		
Rowan	do	3		
Rutherford	do	2		
Swain	do	3		
Union	do	8		
Total for State		98		
*Tennessee:				
Knoxville	Feb. 4-17	7		
Utah:				
Counties—				
Boxelder	Jan. 1-31	4		
Cache	do	17		
Carbon	do	1		
Davis	do	20		
Juab	do	32		
Salt Lake	do	120		
San Pete	do	5		
Tooele	do	32		
Uintah	do	100		
Utah	do	23		
Wasatch	do	11		
Weber	do	25		
Total for State		390		
Grand total for the United States		1,714	7	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED FEB. 10, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	202	22	5	6	....	21	....	....	....	34	22	6	....
Boston, Mass	670,585	233	40	5	181	2	33	2	....	....	53	13	3	....
Chicago, Ill	2,185,283	764	116	14	38	1	134	8	....	....	228	68	12	3
Cleveland, Ohio	560,663	120	30	1	45	1	28	1	1	....	20	18	1	....
New York, N. Y	4,766,883	1,511	333	27	868	14	332	16	2	....	444	181	53	7
Philadelphia, Pa	1,549,008	547	52	15	27	4	25	2	....	....	81	60	20	1
Pittsburgh, Pa	533,905	164	18	....	3	....	18	....	....	....	25	12	3	3
St. Louis, Mo	687,029	259	27	5	16	1	23	....	1	....	44	....	5	2
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	144	17	....	4	....	11	1	....	....	16	10	5	1
Cincinnati, Ohio	364,463	127	12	3	5	....	16	....	4	....	36	15	2	1
Detroit, Mich	465,766	176	13	2	....	....	19	....	6	....	....	....	....	....
Los Angeles, Cal	319,198	111	8	....	5	....	19	....	4	1	24	17	4	1
Milwaukee, Wis	373,857	129	20	3	32	....	30	1	....	....	18	13	41	5
Newark, N. J	347,469	121	15	1	....	1	20	....	....	....	36	10	3	....
New Orleans, La	339,075	147	10	....	3	....	9	....	4	....	26	21	1	....
San Francisco, Cal	416,912	147	4	1	274	1	6	....	....	....	32	15	1	2
Washington, D. C	331,069	123	22	....	3	....	9	....	....	....	28	11	9	....
Cities having from 200,000 to 300,000 inhabitants.														
Jersey City, N. J	267,779	94	....	1	....	....	....	1	....	....	....	9	....	....
Kansas City, Mo	248,381	20	8	....	5	....	2	....	10	....	3	3	1	....
Providence	224,326	81	19	3	5	1	11	1	....	....	....	14	2	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	25	3	....	....	....	5	....	....	....	3	3	....	....
Cambridge, Mass	104,839	31	6	....	....	....	13	....	....	....	8	6	1	....
Columbus, Ohio	181,548	57	7	....	36	....	25	....	....	....	1	6	3	....
Dayton, Ohio	116,577	49	4	....	2	....	3	....	3	....	....	4	3	2
Fall River, Mass	119,295	38	3	2	....	....	4	....	....	....	3	4	....	1
Grand Rapids, Mich	112,571	36	1	....	2	....	10	....	....	....	4	....	2	1
Lowell, Mass	106,294	35	2	1	14	5	3	....	....	....	4	1	....	....
Nashville, Tenn	110,364	....	3	1	....	....	2	....	....	....	16	3	3	....
Oakland, Cal	150,174	37	2	2	....	....	1	....	....	....	1	4	1	....
Omaha, Nebr	124,600	29	1	....	....	....	3	....	....	....	....	1	....	1
Spokane, Wash	104,402	....	5	....	35	....	2	....	10	....	1	3	1	1
Toledo, Ohio	168,497	47	4	2	23	....	9	....	....	....	6	2	5	....
Worcester, Mass	145,986	57	10	....	1	....	15	....	....	....	6	7	....	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	23	3	....	1	....	1	....	....	....	....	2	....	....
Bayonne, N. J	55,545	....	3	....	4	....	1	....	....	....	2	....	....	....
Brockton, Mass	56,878	19	....	....	63	....	3	....	....	....	5	2	1	....
Camden, N. J	94,538	17	3	....	....	....	4	....	....	....	8	....	1	....
Duluth, Minn	78,466	24	3	....	....	....	8	....	....	....	4	1	1	....
Elizabeth, N. J	73,409	26	8	....	4	....	11	....	....	....	2	3	....	....
Evansville, Ind	69,647	28	3	....	1	....	1	....	1	....	1	4	11	....
Fort Wayne, Ind	63,933	11	1	....	2	....	1	....	....	....	5	....	1	....
Harrisburg, Pa	64,186	24	5	1	11	....	1	....	....	....	3	1	....	....
Hartford, Conn	98,915	19	6	5	....	....	7	1	....	....	3	....	....	....
Hoboken, N. J	70,324	29	7	....	2	....	6	....	....	....	9	....	....	....
Houston, Tex	78,800	41	....	....	....	....	....	....	....	....	....	2	....	....
Johnstown, Pa	55,482	17	2	....	....	....	5	....	....	....	....	....	....	....
Kansas City, Kans	82,331	....	1	....	....	....	....	....	1	....	8	....	1	....
Lawrence, Mass	85,892	25	3	....	1	....	1	....	....	....	1	1	1	....
Lynn, Mass	89,336	23	3	....	7	....	6	....	....	....	6	4	1	....
Manchester, N. H	70,063	23	9	1	28	....	....	....	1	....	2	2	....	2
New Bedford, Mass	96,652	42	2	1	7	....	3	....	....	....	4	3	3	....
Passaic, N. J	54,773	19	1	....	2	....	3	....	....	....	2	1	1	....
Pawtucket, R. I	51,622	....	....	....	....	....	....	....	....	....	....	2	....	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 10, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Reading, Pa	96,071	28	3	1	1	....	3	....	....	....	1.	1	1	1
Saginaw, Mich	50,510	....	6	1	....	....	2	....	....	....	3	3	2	1
San Antonio, Tex	96,614	37	....	....	27	....	3	....	....	....	....	7	....	....
Schenectady, N. Y	72,826	19	....	....	1	....	2	....	....	....	3	1	2	....
South Bend, Ind	53,684	13	....	....	....	....	1	....	....	....	....	3	2	....
Springfield, Ill	51,678	14	3	....	....	....	1	....	2	....	....	1	....	....
Springfield, Mass	88,926	22	3	....	35	....	5	....	....	....	1	1	2	....
Trenton, N. J	96,815	42	1	....	....	....	1	....	....	....	4	1	1	1
Wichita, Kans	52,450	....	1	....	....	....	2	....	....	....	2	....	....	....
Wilkes-Barre, Pa	67,105	27	2	....	58	....	....	....	....	....	6	1	....	....
Wilmington, Del	87,411	30	....	....	....	....	....	....	....	....	....	6	....	....
Yonkers, N. Y	79,803	17	6	....	3	....	6	....	....	....	3	3	....	....
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	9	....	....	1	....	....	....	....	....	....	....	....	....
Auburn, N. Y	34,668	15	1	....	....	....	1	....	....	....	2	....	1	....
Aurora, Ill	29,807	6	1	....	....	....	1	....	....	....	....	....	....	....
Berkeley, Cal	40,434	11	....	....	9	....	....	....	....	....	1	4	....	....
Binghamton, N. Y	48,443	23	1	....	....	....	1	1	....	....	2	1	1	1
Brookline, Mass	27,792	6	....	....	2	....	2	....	....	....	1	....	....	....
Chattanooga, Tenn	44,604	....	2	....	....	....	....	....	1	....	1	....	1	....
Chicopee, Mass	25,401	5	1	....	....	....	....	....	....	....	1	1	....	....
Danville, Ill	27,871	7	1	....	....	....	....	....	....	....	....	1	....	....
East Orange, N. J	34,371	7	2	....	2	....	9	....	....	....	....	....	....	....
Elmira, N. Y	37,176	15	2	....	....	....	....	....	....	....	2	1	....	....
Everett, Mass	33,484	11	1	....	2	....	4	....	....	....	2	1	....	....
Fitchburg, Mass	37,826	9	3	....	....	....	3	....	....	....	2	1	....	....
Haverhill, Mass	44,115	13	2	....	25	....	3	....	....	....	1	....	2	....
Kalamazoo, Mich	39,437	17	....	....	....	....	2	....	....	....	2	2	2	....
La Crosse, Wis	30,417	11	2	1	....	....	....	....	....	....	1	....	....	....
Lancaster, Pa	47,227	....	2	....	1	....	1	....	....	....	2	....	....	....
Lexington, Ky	35,099	19	2	....	19	....	1	....	....	....	1	1	2	....
Lynchburg, Va	29,494	11	1	....	7	....	4	1	....	....	1	....	....	....
Malden, Mass	44,404	11	....	....	2	....	4	....	....	....	3	2	....	....
Montgomery, Ala	38,136	20	....	....	7	....	1	....	3	....	1	2	12	1
Newcastle, Pa	36,280	....	8	....	1	....	1	....	....	....	8	....	22	....
Newport, Ky	30,309	13	....	....	....	....	1	....	1	....	1	1	1	1
Newton, Mass	39,806	13	1	....	10	....	3	....	....	....	....	....	....	....
Niagara Falls, N. Y	30,445	11	2	....	....	....	2	....	....	....	....	....	2	....
Norristown, Pa	27,875	11	....	....	....	....	....	....	....	....	....	2	....	....
Orange, N. J	29,630	16	4	....	1	....	5	....	....	....	2	1	1	....
Pasadena, Cal	30,291	13	....	....	....	....	....	....	....	....	....	1	....	....
Pittsfield, Mass	32,121	13	9	1	1	....	1	....	....	....	....	....	....	....
Portsmouth, Va	33,190	14	....	....	....	....	1	1	2	....	....	....	....	....
Racine, Wis	38,002	11	4	....	....	....	....	....	....	....	....	1	[illegible]	....
Roanoke, Va	34,874	10	1	....	47	....	....	....	3	....	5	....	....	....
Rockford, Ill	45,401	....	2	....	....	....	....	....	....	....	....	....	16	....
Salem, Mass	43,697	25	....	....	1	....	1	....	....	....	....	1	....	....
San Diego, Cal	39,578	....	....	....	....	....	1	....	....	....	4	4	....	....
South Omaha, Nebr	26,259	7	....	....	....	....	1	....	....	....	....	....	....	....
Superior, Wis	40,384	5	1	....	....	....	....	....	2	....	....	....	....	....
Taunton, Mass	34,259	13	2	....	....	....	1	....	....	....	1	....	....	....
Waltham, Mass	27,834	7	3	....	8	....	....	....	....	....	2	....	....	....
West Hoboken, N. J	35,403	....	1	....	3	....	3	....	....	....	2	....	....	....
Wheeling, W. Va	41,641	18	2	1	....	....	....	....	....	....	....	2	2	3
Williamsport, Pa	31,860	9	....	....	1	....	....	....	....	....	4	2	....	....
Wilmington, N. C	25,748	14	2	....	....	....	1	....	5	....	1	....	....	....
York, Pa	44,750	....	1	....	2	....	1	....	....	....	....	....	2	....
Zanesville, Ohio	28,026	15	2	....	1	....	....	....	....	....	....	1	28	2

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 10, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	4					1							
Beaver Falls, Pa	12,191				2		1						4	
Braddock, Pa	19,957	7					1					3	1	
Butler, Pa	20,782	6	1								5			
Cambridge, Ohio	11,327	4					1							
Camden, S. C		2					1							
Carbondale, Pa	17,040	5					6							
Clinton, Mass	13,075	7									1			
Coffeyville, Kans	12,687										1		2	
Columbus, Ga	20,554	6												
Columbus, Ind		3										1		
Concord, N. H	21,497	9			2		1							
Cumberland, Md	21,839	8									2	2	2	
Dunkirk, N. Y			3										1	
Galesburg, Ill	22,089	7											1	
Gloucester, Mass	24,398	6										1		
Harrison, N. J	14,498	4	3											
Homestead, Pa		11	3	1										
Kearny, N. J	18,659	6					1							
La Fayette, Ind	20,081	3												
Lebanon, Pa	19,240		5	2									1	
Logansport, Ind	19,050	4	1		1									
Marinette, Wis	14,610	2			9								4	
Marlboro, Mass	14,579	5	1				1							
Massillon, Ohio		5												
Medford, Mass	23,150	8	1		2		1							
Melrose, Mass	15,715	2			9		2							
Moline, Ill	24,199	4	1		1						1			
Montclair, N. J	21,150	7	1		1		1				1	1		
Morristown, N. J	12,507	7									2	2		
Nanticoke, Pa	18,507	2	1	1	10									
Newburyport, Mass	19,240	8	1									1		
North Adams, Mass	22,012	8	1	1	3									
Northampton, Mass	19,431	7												
Ottumwa, Iowa	22,012	5												
Peekskill, N. Y		2												
Plainfield, N J	22,250	8			13		2				1	1		
Pottstown, Pa		10			3									
Saratoga Sgrings, N. Y		5												
South Bethlehem, Pa	19,973	2	1		5									
Steelton, Pa	14,246	6	4						2		9	1		
Warren, Pa	11,081	2	1	1							1			
Wilkinsburg, Pa	18,924	5									1			
Woburn, Mass	15,308	7			1						1			

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

FLORIDA.—Week ended February 10, 1912. Diphtheria present in 3 localities with 4 cases, malaria in 3 localities with 7 cases, smallpox in 12 counties with 53 cases, tuberculosis in 4 localities with 4 cases, typhoid fever in 4 localities with 7 cases.

INDIANA.—Month of December, 1911. Population, 2,700,876. Total number of deaths from all causes 2,777, including diphtheria 48, measles 1, scarlet fever 11, tuberculosis 304, typhoid fever 50. Cases reported: Diphtheria 328 in 49 counties, scarlet fever 314 in 53 counties, typhoid fever 168 in 50 counties.

MINNESOTA.—Month of November, 1911. Population, 2,075,708. Total number of deaths from all causes 1,521, including diphtheria 19, scarlet fever 6, smallpox 1, tuberculosis 174, typhoid fever 51.

UTAH.—Month of January, 1912. Population, 373,351. Total number of deaths from all causes 297, including diphtheria 5, tuberculosis 11, typhoid fever 3. Cases reported: Diphtheria 41, measles 167, scarlet fever 183, smallpox 390, tuberculosis 7 (incomplete), typhoid fever 6.

FOREIGN AND INSULAR.

CHINA.

Hongkong—Plague—Examination of Rats.

Surg. Brown reports: During the week ended January 13, 3 cases of plague, with 2 deaths, were reported at Hongkong.

During the same period 1,633 rats were examined for plague infection. No plague-infected rat was found.

COLOMBIA.

Barranquilla—Communicable Diseases.

The report of the Charity Hospital in Barranquilla for the month of November, 1911, shows 523 ambulatory cases examined, of which 180 were malaria, 60 enteritis, 40 dysentery, 25 metrorrhagia, 18 tuberculosis, 50 hepatitis, 25 grippe, 14 gastritis, 30 anemia (probably caused by hookworm or malaria), 26 rheumatism. Of 100 cases in hospital at the end of the month, 50 were malaria from Aracataca, 10 malaria from a locality at the mouth of Atrato River, 10 malaria from Zaragoza. This statement gives an idea of the prevailing diseases among the poorer classes.

CUBA.

Transmissible Diseases.

The following statement of transmissible diseases in the island of Cuba was issued by the sanitary department:

MONTH OF JANUARY, 1912.

	New cases.	Deaths.	Cases remaining under treatment.
Tuberculosis	131	180	1,712
Leprosy	5	3	350
Malaria	142	15	141
Typhoid fever	66	12	64
Diphtheria	85	12	19
Scarlet fever	18	1	6
Measles	80	4	32
Varicella	13	0	9
Tetanus in new-born	10	10	1
Filariasis	2	0	2
Dengue	1	0	1

HAWAII.

Plague at Honakaa—Infected Rats.

Chief Quarantine Officer Ramus reports, February 29, the occurrence of 2 deaths from plague at Honokaa February 25. Two plague-infected rats were found at Hilo and 1 at Honakaa.

ITALY.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo week ended February 3, 1912:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Feb. 2	Hamburg	New York	484	60	620
3	Adriatic	do	893	150	1,100
3	Caronia	do			
	Total		1,377	210	1,720

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Jan. 29	Luzon	New York			
29	Dora Baltea	do			
Feb. 3	Hamburg	do	62	40	100
	Total		62	40	100

JAVA.

Batavia Declared Free from Cholera.

The American consul reports that the district of Batavia was officially declared free from cholera December 31, 1911.

MEXICO.

Typhus Fever.

At Aguascalientes Consul Schmutz reports the occurrence of 4 deaths from typhus fever during the week ended February 11.

At Tampico Consul Miller reports 1 death from typhus fever during the 10 days ended January 20.

At Mexico City Consul General Shanklin reports the occurrence of 122 cases of typhus fever, with 9 deaths, during the two weeks ended January 13.

Puerto Mexico (Coatzacoalcos)—Yellow Fever.

Acting Asst. Surg. Thompson reports the occurrence of a death from yellow fever at Puerto Mexico (Coatzacoalcos) February 28.

PERU.

Status of Plague.

The following information was received from the director of public health of Peru:

OCTOBER 1-21, 1911.

Place.	Cases remaining Sept. 30.	New cases.	Recovered.	Died.	Remaining Oct. 21.
Lima	10	13	4	6	13
Callao	2	1	1		2
Trujillo	2	8	1		9
Chiclayo	1	12		4	9
Lambayeque	1	3			4
Islay	2		2		
Chosica		1		1	

Callao—Plague.

Acting Asst. Surg. Castro-Gutierrez reports:

One case of plague occurred at Callao during the month of November, 1911, and 3 cases with 2 deaths from January 1 to 20, 1912.

RUSSIA.

Plague.

According to information taken from the bulletin issued by the commission for the suppression of plague in Astrakhan, 3 cases of plague and 5 deaths were reported in the Kirghis Steppe, Astrakhan Government, from January 2 to 7. From October 4, 1911, the date of the beginning of the new outbreak, to January 7, 1912, a total of 201 cases with 180 deaths was reported.

VENEZUELA.

La Guaira—Yellow Fever.

Information received February 27 shows the presence of yellow fever at La Guaira.

ZANZIBAR.

Zanzibar—Examination of Rats.

Consul Weddell reports: During the three weeks ended January 7, 2,649 rats were examined for plague infection. No plague-infected rat was found.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED MAR. 1, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Madras	Jan. 14-20	18	14	
Indo-China:				
Saigon	Jan. 2-8	197	145	
Turkey in Asia:				
Aleppo	Jan. 28-Feb. 3	11	5	

YELLOW FEVER.

Mexico:				
Puerto Mexico (Coatzocoalcos)	Feb. 28		1	7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Salina Cruz	Feb. 4-7			
Venezuela:				
Caracas	Jan. 1-15	8	8	
La Guaira	Feb. 27			Present.

PLAGUE.

China:				
Hongkong	Jan. 7-13	3	2	
Hawaii:				
Honakaa	Feb. 25	2	2	
India:				
Bombay	Jan. 14-20	6	4	
Karachi	do	1	1	
Mauritius	Dec. 1-7	7	6	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received during week ended Mar. 1, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Peru:				
Departments—				
Callao	Oct. 1-21	1		In November 1 case, in January 3 cases with 2 deaths.
Chiclayo	do	12	4	
Chosika	do	1	1	
Lambayeque	do	3		
Libertad	do	8		
Lima	do	13	6	
Straits Settlements:				
Singapore	Jan. 1-6	2	2	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Bohemia	Jan. 14-20	1		
Krain	do	7		
Tyrol	do	1		
Brazil:				
Pernambuco	Dec. 15-31		77	
Canada:				
Montreal	Feb. 11-17	7		
Ottawa	Feb. 4-17	15		
Quebec	Feb. 10-17	16		
Toronto	Feb. 4-10	1		
Victoria	do	1		
Chile:				
Santiago	Nov. 1-30	[1] 685	343	
Valparaiso	Jan. 14-20			Present.
China:				
Hongkong	Jan. 6-13	27	19	
Shanghai	Jan. 15-21		1	
France:				
Paris	Jan. 21-27	5	2	
Germany	Jan. 28-Feb. 3	1		
Great Britain:				
London	do	2		
India:				
Bombay	Jan. 14-20	16	12	
Madras	do	8	6	
Italy:				
Leghorn	Feb. 4-10	4		
Messina	Jan. 1-31		1	
Turin	Jan. 29-Feb. 4	1		
Japan:				
Kobe	Jan. 22-28	1	1	Jan. 20, one case from s. s. Suveric from Hongkong.
Java:				
Batavia	Jan. 7-13	3	1	
Mexico:				
Aguascalientes	Feb. 5-11	1		
Chihuahua	Jan. 22-Feb. 11	30	15	
Magdalena	Feb. 7			62 cases present.
Mazatlan	Feb. 13			33 cases in the lazaretto.
Mexico	Jan. 1-13	12	7	
Tampico	Jan. 10-Feb. 10		4	
Portugal:				
Lisbon	Jan. 28-Feb. 3	2		
Siberia:				
Omsk	Jan. 1-31	7		
Spain:				
Madrid	do		2	
Valencia	do	24		
Straits Settlements:				
Singapore	Jan. 1-6	2		
Switzerland:				
Canton—				
Oberwalden	Jan. 14-20	1		
Teneriffe:				
Santa Cruz	Jan. 28-Feb. 3		4	
Turkey in Europe:				
Constantinople	Jan. 29-Feb. 4		8	
Venezuela:				
Caracas	Jan. 1-15		2	

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[1] Bulletin Sanitary Information, Brussels, Jan. 13, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

REPORTS RECEIVED FROM DEC. 30, 1911, TO FEB. 23, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24-Nov. 27: Cases, 876; deaths, 529.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India:				
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Calcutta	Nov. 5-Feb. 6		300	
Madras	Nov. 26-Jan. 13	400	330	Madras Presidency, Dec. 1-31: Cases, 3,879; deaths, 2,412.
Rangoon	Oct. 1-Nov. 30	6	3	
Indo-China:				
Saigon	Nov. 20-Jan. 1	861	638	
Italy				Total June 8-Dec. 31: Cases: 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including cases previously reported.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Dolliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia:				
Belgrade, district	Nov. 26-Dec. 16		1	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Dec. 30		559	
Straits Settlements				
Singapore	Nov. 5-18	3	3	
Tripoli:				
Tripoli	Oct. 25-Nov. 10			150 to 200 among the civil population and 25 to 30 among the military, Dec. 21, 1911.
Tunis Regency				Total Nov. 25-Jan 4: Cases, 358; deaths, 396.
Beja district	Nov. 25-Dec. 7	30	35	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia:				
Adana	Dec. 2-6	16	5	
Aleppo	Jan. 26-27	5	3	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 23, 1912—Continued.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia—Continued.				
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,646; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Jan. 21	6	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 22	17	8	
Loros	do	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	Nov. 19-Jan. 6		8	
Para	Dec. 9-16	1	1	
Ecuador:				
Bucay	Nov. 16-30	2		
Duran	Dec. 1-15	3	2	
Guayaquil	Nov. 16-Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Maxcanu	do	1		
Merida	Nov. 12-Feb. 3	15	9	Total Aug. 1-Feb. 3: Cases, 60; deaths, 29.
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Dec. 31	17		
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Jan. 27	18	10	
Pernambuco	Oct. 16-Jan. 16		4	
Rio de Janeiro	Nov. 12-Dec. 23	6	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
British South Africa:				
Durban	Jan. 17	2	1	
Chile:				
Iquique	Nov. 12-Jan. 6	10	4	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9-30	4	3	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 9: Cases, 1,777; deaths, 1,262.
Pasoeroean Residency, Malang District.	Nov. 12-Jan. 13	66	32	
Soerobaya	Oct. 17-27	2		
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamoge.
Ecuador:				
Guayaquil	Nov. 16-Dec. 15	102	42	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 23, 1912—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Egypt	...	...	...	Total Jan. 1–Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1–25	12	9	Sept. 11–16: Cases, 50; deaths, 28.
Assouan	Jan. 1–Feb. 25	1	1	
Behera	Jan. 1–25	3	2	Sept. 11–16: Cases, 11; deaths, 8.
Fayoum	Jan. 1–26	1	...	
Galioubeh	...	...	...	Oct. 5–Dec. 26: Cases, 1
Garbieh	Jan. 1–25	1	...	
Kena	do	1	1	Nov. 20–Dec. 13: Cases, 3; deaths, 3.
Minieh	do	3	2	Dec. 13: Cases, 1.
Hawaii:				
Honakaa	Feb. 9	1	1	
India:				
Bombay	Nov. 19–Jan. 13	74	66	
Calcutta	Nov. 11–Feb. 6	...	46	
Karachi	Nov. 26–Jan. 13	38	36	Total, year 1911: Cases, 3,273; deaths, 3,046.
Rangoon	Oct. 1–Nov. 30	38	39	
Bombay Presidency and Sind.	Oct. 29–Dec. 30	35,557	25,895	
Madras	Jan. 1–6	1	1	
Madras Presidency	Oct. 29–Dec. 30	4,687	3,770	
Bengal	do	3,893	2,827	
United Provinces	do	12,270	10,459	
Punjab	do	1,229	895	
Burma	do	206	187	
Central Provinces	do	6,883	5,234	
Coorg	do	75	42	
Mysore State	do	4,913	3,801	
Hyderabad State	do	10,830	10,038	
Central India	do	4,242	3,486	
Rajputana and Ajmere Merwara.	do	457	362	
North West Province	Oct. 29–Dec. 9	1	1	Total for India, Oct. 29–Dec. 30: Cases, 85,243; deaths, 66,997. Total, year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13–Jan. 1	21	...	
Java:				
Kediri	Nov. 26–Dec. 2	1	1	
Madioen	do	5	5	
Mauritius	Nov. 3–30	29	20	
Peru:				
Salaverry	Dec. 25–Jan. 9	...	...	Present in vicinity.
Philippine Islands:				
Cebu quarantine station	Dec. 4	1	...	On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21–Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol. I.
Siam:				
Bangkok	Nov. 4–Dec. 2	...	2	
Straits Settlements:				
Singapore	Nov. 5–Dec. 30	15	14	
Turkey in Asia:				
Jiddah	Jan. 13–15	2	...	

SMALLPOX.

Algeria:				
Algiers	Nov. 1–30	...	1	
Arabia:				
Aden	Nov. 28–Jan. 15	5	3	And vicinity.
Argentina:				
Buenos Aires	Oct. 1–31	...	6	
Rosario	Oct. 1–Nov. 30	...	31	
Austria-Hungary:				
Galicia	Dec. 24–30	1	...	
Trieste	Dec. 3–9	1	...	From s. s. Baron Call from
Brazil:				
Bahia	July 1–31	...	1	
Pernambuco	Oct. 16–Nov. 30	...	246	Report for Oct. 1–15 r
Rio de Janeiro	Nov. 26–Jan. 6	3		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 23, 1912—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
British Columbia—				
Nelson	Dec. 24-30	1		
Manitoba—				
Winnipeg	Jan. 14-20	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Jan. 27	45		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-13		1	
Windsor	Feb. 4-10	2		
Quebec—				
Montreal	Dec. 17-Feb. 10	13		
Quebec	Dec. 10-Feb. 10	208	1	
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Iquique	Dec. 10-16	2		
La Serena	Nov. 21-30	14		
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chungking	Nov. 18-Dec. 9			Present.
Hongkong	Nov. 12-Jan. 6	100	78	
Nanking	Dec. 10-Jan. 27			Do.
Shanghai	Dec. 11-Jan. 7		2	
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald from Spain and Canary Islands, case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-Jan. 14	3		
France:				
Marseilles	Nov. 1-30		1	
Paris	Dec. 3-Jan. 20	51	3	
Germany				Total, Dec. 31-Jan. 27: Cases, 9.
Hamburg	Jan. 21-27	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
London	Feb. 14-20		1	
India:				
Bombay	Nov. 19-Jan. 13	71	39	
Calcutta	Nov. 19-Feb. 6		17	
Madras	Nov. 26-Jan. 13	40	23	
Rangoon	Oct. 1-Nov. 30	29	9	
Indo-China:				
Saigon	Nov. 13-Jan. 1	23		
Italy:				
Genoa	Dec. 1-Jan. 31	33	2	
Leghorn	Dec. 16-Feb. 3	79	1	
Messina	Nov. 19-Dec. 31		5	
Naples	Dec. 3-Jan. 27	50		
Palermo	Nov. 26-Jan. 27	1,946	655	
Turin	Jan. 15-21	2		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Java:				
Batavia	Nov. 12-Jan. 6	19	4	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Feb. 3		4	
Chihuahua	Nov. 20-Jan. 21	62	21	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Feb. 10		2	
Juarez	Dec. 19-Feb. 10	9	4	
Magdalena	Dec. 23-Feb. 7		47	Feb. 7, 62 cases present.
Mazatlan	Dec. 11-Jan 30		9	
Mexico	Nov. 26-Dec. 30	34	18	
Monterey	Dec 11-24		2	
Porfirio Diaz	Dec. 3-Feb. 3		30	
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8			

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports received from Dec. 30, 1911, to Feb. 23, 1912—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
San Luis Potosi	Nov. 12-Dec. 2	3		
Tampico	Dec. 1-31	4	4	
Tapachula	Nov. 1-Dec. 31		14	
Portugal:				
Lisbon	Dec. 9-Jan. 27	21		
Russia:				
Batum	Dec. 1-31	1		
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Jan. 20	22	8	
Odessa	Nov. 26-Jan. 13	10	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-Jan. 27	16		Oct. 1-Nov. 30; deaths, 2.
St. Petersburg	Nov. 19-Jan. 27	95	14	
Warsaw	Nov. 5-Dec. 2		185	
Siam:				
Bangkok	Nov. 5-Dec. 30		626	
Spain:				
Cadiz	Nov. 1-Dec. 31		14	
Madrid	Dec. 1-31		1	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-31		5	
Valencia	Dec. 3-Jan. 27	107	10	
Straits Settlements:				
Singapore	Nov. 19-Dec. 30	12	4	
Switzerland:				
Zurich, Canton	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Jan. 27		31	
Turkey in Asia:				
Beirut	do	285	47	
Turkey in Europe:				
Constantinople	Dec. 4-Jan. 28		45	
Uruguay:				
Montevideo	Sept. 1-Nov. 30	23	4	
Venezuela:				
Caracas	Nov. 1-Dec. 31	11		
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Feb. 3	163,084	57										1	1
Aguascalientes	Feb. 11	40,000	53					1	4			1		
Aleppo	Jan. 27	200,000				3								
Do	Feb. 3					5								
Amoy	Jan. 13	200,000			1					1				
Do	Jan. 20									1				
Amsterdam	Feb. 8	580,962	153	24								1	2	6
Antwerp	Jan. 27	309,839	86	7										2
Barmen	do			5								1		
Batavia	Jan. 6	217,630							1					
Do	Jan. 13							1						
Beirut	Jan. 27	80,000	25	2				15	10					
Belfast	Feb. 3	385,492	233	28							1	1		14
Berlin	Jan. 20	2,085,626	564	67							10	17	6	6
Do	Jan. 27		615	72							5	17	1	9
Belgrade	do	90,050	28											

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Birmingham	Feb. 3	842,512	312									1		20
Bombay	Jan. 20	977,822	713	38	4			12					8	
Bordeaux	Feb. 3	253,000	116	12						1			2	
Bradford	Jan. 20	289,618	70	2								1	1	
Do	Jan. 27		90	11								1	1	
Do	Feb. 3		84	6						1	1	1	1	
Bristol	..do	359,400	150	11							1	2	2	1
Brunswick	Jan. 20-27	145,000		1							4	11		
Brussels	Jan. 27	649,846	238	21						2	1		10	
Cairo	Jan. 14	689,439	493	26					6	1		11		
Calcutta	Jan. 13	890,493	529	30	12	28								
Catania	Feb. 2	207,000	70	1								3	1	
Chihuahua	Jan. 28	39,000	21	4				1						
Do	Feb. 4		32	7				4						
Do	Feb. 11		22	1				3			1			
Christiana	Jan. 27	245,000	81	7							1		3	
Do	Feb. 3		57	11						1		2		
Constantinople	Jan. 28	1,000,000	306	38				6		5	1	3	2	
Do	Feb. 4		323	36				8		5	2	3	4	
Cologne	Jan. 27	525,671	171	22								1	4	3
Copenhagen	Jan. 20	465,000	118	7								1		2
Dalny	Jan. 29	47,695	27								1			
Dresden	Jan. 20	555,000	143	25								2		
Dundee	Feb. 3	171,006	65	7										1
Georgetown	Jan. 20	57,577	56	5						5				
Do	Jan. 27		51	5						1				
Edinburgh	Feb. 3	321,200	92	6								3	3	1
Frankfort-on-Main	Jan. 20	423,600	93									3		1
Ghent	Jan. 27	166,235	61	2										1
Glasgow	Feb. 9	785,600	340								2	4	43	3
Gothenburg	Jan. 27	170,100	35	9						1		2		1
Greenock	Feb. 3	75,900	31										1	1
Hamburg	Jan. 27	953,079	322	38						1	3	11	2	3
Havre	Feb. 3	136,159	79	8						1	1		2	
Hongkong	Jan. 6	336,488						22				1		
Hull	Feb. 3	282,987	102							1		1		
Karachi	Jan. 20	149,000	88		1									
Kharput	Jan. 26	21,000								1				
Kingston, Ont	Feb. 10	21,000	5							1				
Do	Feb. 11		8							1				
Kobe	Jan. 21	418,646	171									4		
Do	Jan. 28		152					1				2		
Leeds	Feb. 3	445,568	172	19							1	3		1
Liege	Jan. 27	167,521	63	4							3		2	
Liverpool	Feb. 3	752,055	309	34							2	3	2	5
London	..do	7,340,125	2,289							4		23	9	40
Lubec	Jan. 27	100,000	34	4								1		
Madras	Jan. 20	518,660	530			14		6		1			1	
Magdeburg	Jan. 13	285,671	98	6							2	5		
Manchester	Feb. 3	631,533	343	32						4		2	13	13
Mannheim	Jan. 20	200,000	51	4									1	
Maracaibo	Feb. 9	50,000	12	4						1				
Mexico	Jan. 6	719,052	441	24				4	11				5	9
Do	Jan. 13		416	19				8	9		4	1	4	5
Montreal	Feb. 10	466,197	150	22						2		2		6
Do	Feb. 17		206	26						2	3	1		2
Moscow	Jan. 20	1,500,000	774	111				1		5	15	14	37	[illegible]
Nagoya	Jan. 13	419,434	159							2				
Newcastle-on-Tyne	Feb. 3	269,193	98	13							2	1	1	1
Nottingham	Jan. 24	260,000	88	8									1	
Ottawa	Feb. 10	90,000	39	5								2		
Ottawa	Feb. 17	90,000	27	1								5		
Palermo	Jan. 27	340,000	205	11				60		1	5			
Para	..do	185,000	76	4	6									
Paris	..do	2,888,110	1,049	221				2		10	4	6	15	1
Patras	Feb. 4	40,000	12							1				
Plymouth	Feb. 3	124,180	44									1		
Port Elizabeth	Jan. 6	30,692	11	3										[illegible]
Do	Jan. 13		9	2						1				
Port Said	Jan. 14	52,811	25	2								1		

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Quebec	Feb. 17	78,200										1		
Rangoon	Jan. 13	289,432	180		5	5		2						
Roubaix	Jan. 31	122,723	140	24								1		
Rotterdam	Feb. 3	436,015	103									2		
Saigon	Jan. 8	220,000				145								
Salina Cruz	Feb. 10	6,138								1				
St. Petersburg	Jan. 13	1,907,708	795	136				2		10	17	10	37	9
Salina Cruz	Feb. 3	6,138	8	1										
Santa Cruz de Teneriffe	Jan. 27	46,000	23	1				2		1				
Santiago de Cuba	Feb. 3	53,614	15									1		
Shanghai	Jan. 15 Jan. 28	500,000	328	37				1			6	6	26	
Sheffield	Feb. 3	455,000	150	12							1	2		6
Singapore	Jan. 6	303,828	219	28	2									
Stockholm	Jan. 20	343,832	81	14									2	1
Talcahuana	Jan. 13	28,000		2									1	2
Do	Jan. 24			3									2	
Tampico	Jan. 15 Feb. 10	23,452	123					4	1					2
Tientsin	Jan. 20	425,000	41	9								1		
Toronto	Feb. 3	392,000	133	14						1	1	2		
Do	Feb. 10		120	4							2	4		
Do	Feb. 17		124	5							3	2		
Trieste	Jan. 20	233,925	104										2	
Turin	Feb. 4	401,555	157	19						1			6	
Valencia	Feb. 3	240,000	112	11								1	1	
Victoria	Feb. 10	31,620	12	1							1			
Vienna	Jan. 20	2,064,583	677	108							5	5	7	4
Vigo	Jan. 27	41,500	14	3						1				
Do	do		15	2								2		
Windsor	Feb. 17	17,819	3							1				
Winnipeg	Feb. 3	151,958	38	1									1	
Do	Feb. 10		44	1						1			3	
Yokohama	Jan. 29	419,630								1		1		

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

BRAZIL—*Pernambuco.*—Two weeks ended December 31, 1911. Population, 225,000. Total number of deaths from all causes 409, including smallpox 77, tuberculosis 79, typhoid fever 1.

CANADA—*Hamilton.*—Month of January, 1912. Population, 82,000. Total number of deaths from all causes 116, including diphtheria 1, measles 1, tuberculosis 4, typhoid fever 1.

Vancouver.—Month of December, 1911. Population, 100,000. Total number of deaths from all causes 98, including diphtheria 2, measles 1, tuberculosis 10, typhoid fever 2.

FRANCE—*Calais.*—Month of January, 1912. Population, 75,000. Total number of deaths from all causes 109, including diphtheria 1, measles 2, tuberculosis 32.

Nice.—Month of August, 1911. Population, 168,185. Total number of deaths from all causes 237, including tuberculosis 34, typhoid fever 20.

Month of September, 1911. Total number of deaths from all causes 219, including tuberculosis 27, typhoid fever 12.

Month of October, 1911. Total number of deaths from all causes 181, including tuberculosis 30, typhoid fever 13.

GREAT BRITAIN.—Week ended January 27, 1912:

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 16.5 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 22.3 per 1,000 of the population. which is estimated at 1,157,014. The lowest rate was recorded at Wexford, viz, 4.6, and the highest at Belfast, viz, 27.5 per 1,000.

Scotland.—The deaths registered in 18 towns correspond to an annual rate of 17.7 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Falkirk, viz, 7.6, and the highest at Ayr, viz, 31.1 per 1,000. The total number of deaths from all causes was 740, including diphtheria 13, measles 39, scarlet fever 4. typhoid fever 4.

ITALY—*Genoa.*—Two weeks ended January 31, 1912. Population, 272,077. Total number of deaths from all causes 150, including diphtheria 2, measles 1, scarlet fever 1, smallpox 1, tuberculosis 59. typhoid fever 1.

JAMAICA—*Kingston.*—Month of January, 1912. Population, 52,000. Total number of deaths from all causes 183, including tuberculosis 16, typhoid fever 2.

PORTUGUESE EAST AFRICA—*Laurenço Marquez.*—Month of October, 1911. Population, 10,000. Total number of deaths from all causes 26, including tuberculosis 4.

RUSSIA—*Riga.*—Month of October, 1911. Population, 385,000. Total number of deaths from all causes 580, including diphtheria 10. measles 1, scarlet fever 31, smallpox 1, typhoid fever 5, typhus fever 2.

Month of November, 1911. Total number of deaths from all causes 560, including diphtheria 6, scarlet fever 14, smallpox 1. typhoid fever 10.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General.
United States Public Health and Marine-Hospital Service

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THE FIFTH INTERNATIONAL SANITARY CONFERENCE OF AMERICAN REPUBLICS.

HELD AT SANTIAGO DE CHILE, NOVEMBER 5-12, 1911.

Report by G. M. Guiteras, Surgeon, Public Health and Marine-Hospital Service.

Pursuant to a resolution adopted by the Fourth International Sanitary Conference of American Republics and to an official call issued by the International Sanitary Bureau of Washington, the Fifth International Sanitary Conference of American Republics was held in Santiago de Chile, Chile, from November 5 to 12, 1911.

On November 5 the inaugural session was held at the University of Chile, the President of the Republic, the ministers of state, and the diplomatic corps being present.

The first speaker was Dr. Rodríguez, the minister for foreign affairs, who greeted the delegates and recited the great advances made in the field of preventive medicine as a result of the international conferences previously held. He laid particular stress on the fact that these conferences were of value not only from the point of view of the hygienist, but also because they fostered a spirit of fraternity and good will among the American Republics.

The next speaker was Dr. Alejandro del Río, provisional president of the conference, who in a more technical style spoke on the same theme as the minister for foreign affairs. He emphasized especially the importance of local sanitation as a means to avoid quarantine restrictions, which at best, he claimed, were inefficient.

On the conclusion of the discourse of Dr. del Río the delegations of the different Governments represented were called upon, in alphabetical order, to make short addresses in answer to the greetings of the two previous speakers. The writer spoke for the American delegation.

The first business session of the conference was held at 10.30 a. m., November 6, under the provisional presidency of Dr. Alejandro del Río, the permanent president, Dr. Máximo Cienfuegos, elected at the previous conference, having died in the interim. By a unanimous vote Dr. del Río was elected permanent president and Dr. Ammunátegui, the temporary secretary, confirmed as permanent secretary. The chairman, then, with the approval of the conference, named Dr. Razetti of the Venezuelan delegation and Dr. Perry of the American delegation as assistant secretaries.

The following delegates were present at the first session of the conference:

Argentina.—Dr. Gregorio Araoz Alfaro and Dr. Fernando Alvarez.

Bolivia.—Dr. Claudio Sanginés.

Brazil.—Surg. Gen. Ismael da Rocha and Dr. Antonio Ferrari.

Chile.—Dr. Alejandro del Río, Dr. Gregorio Ammunátegui, Dr. Octavio Maira, Hon. Paulino Alfonso, Dr. Luis Asta-Buruaga, Dr. Mamerto Cádiz, Dr. Lucio Córdova, Dr. Ramón Corbalán Melgarejo, Dr. Pedro Lautaro Ferrer, Dr. Eduardo Moore, Dr. Manuel Camilo Vial, Dr. Vicente Izquierdo, Dr. Roberto del Río, Dr. Roberto Dávila Boza, Dr. Francisco Landa, Dr. Alcibíades Vicencio, Dr. Eduardo G. Collao, Mr. Jorge C. Mackenna, C. E., Dr. Conrado Ríos, Dr. Ernesto Soza, Dr. Waldo S. Palma, Dr. Alberto Adriazola, Mr. Guillermo Illanes, C. E., Dr. Carlos Altamirano, Dr. Daniel Carvallo, Dr. Benjamín Manterola, Dr. Enrique Deformes.

Colombia.—Dr. Alcibíades Vicencio.

Cuba.—Dr. Hugo Roberts.

Ecuador.—Dr. Luis Felipe Conejo-Gómez.

United States of America.—Dr. Gregorio M. Guiteras and Dr. James C. Perry.

Guatemala.—Dr. Salvados Ortega and Dr. Julio Bianchi.

Mexico.—Dr. Jesús Monjarás.

Panama.—Dr. Caupolicán Pardo Correa.

Paraguay.—Dr. Rogelio Urízar.

Salvador.—Dr. Juan R. Miranda.

Uruguay.—Dr. Ernesto Fernández Espiro and Dr. Jaime H. Oliver.

Venezuela.—Dr. Pablo Acosta Ortiz and Dr. Luis Razetti.

The delegates from Costa Rica, the Dominican Republic, and Honduras presented their credentials on November 7, 8, and 9, respectively. They were as follows:

Costa Rico.—Dr. Fernando Iglesias.

Dominican Republic.—Dr. José R. Campos and Dr. Tito Lizoni.

Honduras.—Dr. Valenzuela Valdéz.

In all there were 18 American Republics represented at the conference, a greater number than at any previous conference.

The following vice presidents were elected:

Dr. Gregorio Araoz Alfaro (Argentina).
Dr. Claudio Sanginés (Bolivia).
Dr. Ismael da Rocha (Brazil).
Dr. Alcibíades Vicencio (Colombia).
Dr. Fernando Iglesias (Costa Rica).
Dr. Hugo Roberts (Cuba).
Dr. Tito V. Lizoni (Dominican Republic).
Dr. Luis Felipe Cornejo-Gómez (Equador).
Dr. Gregorio M. Guiteras (United States of America).
Dr. Salvador Ortega (Guatemala).
Dr. Oscal Valenzuela Valdéz (Honduras).
Dr. Jesús Monjarás (Mexico).
Dr. Caupolicán Pardo Correa (Panama).
Dr. Rogelio Urízar (Paraguay).
Dr. Juan B. Miranda (Salvador).
Dr. Ernesto Fernández Espiro (Uruguay).
Dr. Pablo Acosta Ortiz (Venezuela).

The committees of the conference, as finally constituted, are as follows:

Credentials.—Mr. Paulino Alfonso and Drs. Vicente Izquierdo, Caupolicán Pardo Correa, Ramón Corbalán Melgarejo.

Executive.—Drs. Alejandro del Río, Fernande Alvarez, Ismael da Rocha, G. M. Guiteras, Jesús Monjarás, Ernesto Fernández Espiro.

Plague.—Drs. Antonio Ferrari, Pedro L. Ferrer, Luis F. Cornejo-Gómez.

Malaria and yellow fever.—Drs. J. C. Perry, Hugo Roberts, Claudio Sanginés.

Cholera.—Drs. G. Araoz Alfaro, Luis Asta-Buruaga, G. M. Guiteras.

Sanitation of cities.—Messrs. Jorge Calvo Mackenna and Guillermo Illanes (engineers), and Drs. Carlos Altamirano, Ricardo Dávila Boza, Eduardo García Collao Manuel Camilo Vial, Jaime H. Oliver.

Prophylaxis of acute transmissible diseases.—Drs. Francisco Landa, Pablo A. Ortiz, Alcibíades Vicencio, Juan B. Miranda, Fernando Iglesias.

Prophylaxis of chronic transmissible diseases.—Drs. Roberto del Río, Ernesto Soza, Salvador Ortega, Rogelio Urízar.

Beginning with the second day of the conference the program called for but one business session daily, from 2 to 4 p. m. Toward the close, however, it became evident that if the work of the conference was to be concluded in due time it would be necessary to increase the number and length of the sessions. A resolution was therefore adopted calling for two sessions daily, from 10 to 12 a. m., and from 2 to 4.30 p. m. Furthermore, the unlimited discussion of papers and reports was interdicted and only adverse criticism of the same permitted. Many important and interesting reports were read during the conference, and the animated discussions demonstrated the active interest of the delegates.

The actual work of the conference was performed in the executive committee, which also acted as a committee on resolutions. It discussed the papers and resolutions presented by the delegates and formulated the final resolutions to be adopted by the conference.

The International Sanitary Bureau of Washington was constituted as follows:

President.—Surg. Gen. Walter Wyman, United States of America.

Members.—Dr. Alejandro del Río, Chile; Dr. Hugo Roberts, Cuba; Dr. Oscar Dowling, United States of America; Dr. Salvador Ortega, Guatemala; Dr. Eduardo Licéaga, Mexico; Dr. Luis Razetti, Venezuela.

The International Sanitary Committee of Montevideo is as follows:

President.—Dr. Ernesto Fernández Espiro.

Members.—Dr. Joaquín de Salterain, and Dr. Julio Etchepare, secretary.

The members of the International Information Committees of the different Republics, as proposed by their respective delegations, are given below. Assurance was given by the delegates of the countries that do not appear on this list that their committees would be appointed as soon as possible, as they were not empowered to name them without consulting their respective Governments.

Bolivia.—Drs. Manuel Cuéllar, Elías Sagárnaga, and Enrique Aranibar.
Chile.—Drs. R. Boza, Pedro L. Ferrer, and Lucio Cordova.
Costa Rica.—Drs. Carlos Durán, Elías Rojas, and José M. Soto.
Cuba.—Drs. Juan Guitéras, Enrique B. Barnet, and Arístides Agramonte.
United States of America.—Drs. A. H. Glennan, J. W. Kerr, and John W. Trask.
Guatemala.—Drs. Salvador Ortega, Juan J. Ortega, and Julio Bianchi.
Honduras.—Drs. José M. Ochoa Velásquez, Ignacio Castro, and Juan Angel Arias.
Nicaragua.—Drs. Luis Debayle, Rodolfo Espinosa, and Juan B. Sacoza.
Mexico.—Drs. Eduardo Licéaga, Jesús Monjarás, and Nicolás Ramírez de Arellano.
Panama.—Drs. Luis Uriolla, Alfonso Preciado, and Agusto S. Boyd.
Salvador.—Drs. Tomás G. Palomo, Francisco Guevara, and Rafael B. Castro.
Venezuela.—Drs. Pablo Acosta Ortiz, Carlos Manuel de la Cavada, and Luis Razetti.

The resolutions adopted by the conference were as follows:

(1) *Resolved*, (*a*) That the appreciation of the conference be manifested to the Governments that have been represented.

(*b*) That in so far as possible delegates accredited to future conferences be hygienists, and particularly that they be citizens of the country they represent.

(*c*) To recommend that at least one of the delegates from each country be a sanitary officer of high rank, or one who has attended one or more previous conferences.

(2) *Resolved*, That the countries that have not been prompt in forwarding at regular intervals sanitary information to the International Sanitary Bureau of Washington and the International Information Bureau of Montevideo, respectively, be requested to

do so with regularity. Such reports to include (*a*) the demography of the chief cities and ports, (*b*) the status of contagious diseases.

(3) *Resolved*, That the International Sanitary Bureau of Washington make a study of all the resolutions presented to or adopted by this conference with the purpose of including in the program of the VIth conference the modifications of or amendments to the Washington Convention of 1905 which, in its opinion, should be made.

(4) *Resolved*, That the different governments be requested to organize complete and practical courses for the education of hygienists and that in future they insist on special requirements (diplomas, etc.), for those to be employed in sanitary work.

(5) *Resolved*, That all the Republics that are signatories to the Convention of Washington, comply with the provisions of the said convention.

(6) *Resolved*, To recommend that death-certificates be executed by physicians only, especially in cities and ports, with the object of improving the reports of vital statistics.

(7) *Resolved*, To recommend to the different governments the installation of state or government laboratories for the inspection of food products and beverages, entering through their respective customhouses.

(8) *Resolved*, To recommend that those countries where leprosy exists make an exact and detailed study of the number of lepers existing within their confines; that they establish colonies for their isolation and enact restrictive laws or ordinances with reference to this disease.

(9) *Resolved*, To recommend to the governments of the American Republics that they promote or facilitate investigations on the existence, frequency, and contagiousness of scleroma (rhino-scleroma).

(10) *Resolved*, That the regulation of prostitution in cities and especially in seaports, is recommended; said regulation to be in the hands of physicians especially prepared for this kind of work, the necessary examinations to be carried out in fully equipped dispensaries, and where possible, sufficient power conferred to confine in hospital those liable to transmit venereal diseases.

(11) *Resolved*, To recommend to the various governments the creation in their respective countries of a permanent tuberculosis commission. The International Sanitary Bureau of Washington will urge the establishment of such commissions through the ministers of the various republics resident in Washington. The several republics should also communicate with one another for the purpose of giving information as to the methods employed and the results obtained.

(12) *Resolved*, To recommend that when a vessel enters a port a bulletin be posted aboard to inform the passengers as to the quarantine requirements and the laws and regulations upon which the same are based.

(13) *Resolved*, To recommend to the signatories of the Convention of Washington that they so adjust their quarantine regulations as to make them conform with the requirements of said convention.

(14) *Resolved*, To recommend that those countries having quarantine restrictions against vessels from another country, maintain aboard such vessels sanitary physicians with the necessary technical knowledge.

(15) *Resolved*, To recommend that all vessels carrying passengers or immigrants be provided with the necessary equipment for disinfection.

(16) *Resolved*, To recommend that in the disinfection of vessels controls be employed in order to determine the efficacy of the operation.

(17) *Resolved*, To recommend that all vessels carrying passengers be provided with sufficient hospital space for the sick, and accommodations for the isolation of those suspected of, or those suffering from transmissible diseases.

(18) *Resolved*, That the international information committees of the American Republics, in addition to the duties imposed by previous conferences, shall inform their governments of the obligations contracted in each international sanitary conference in which they have been represented, or of obligations specially ratified.

(19) *Resolved*, That in order to consider an individual immune to yellow fever he must have had an attack of that disease, which fact must be certified to by the sanitary authority of the port of departure.

(20) *Resolved*, (*a*) To recommend that the construction of waterworks and sewerage systems, as well as the management of the same, be under the control of the state or municipality and under no circumstances be the subject of private gain; and (*b*) that the selection of potable water supplies for urban districts be made by hygienists and engineers in accord, giving due attention to a study of the watershed and the possibility of pollution.

(21) *Resolved*, That the governments here represented should always give preference when undertaking sanitary works to those cities or ports where there exist exotic diseases or infectious-contagious diseases of grave character.

(22) *Resolved*, To reiterate the recommendation of the Third International Sanitary Conference, held in the City of Mexico in 1907, to promote the enactment of laws relative to obligatory vaccination and revaccination against smallpox.

(23) *Resolved*, That all passengers from cholera-infected districts, or who may have been in contact with those infected with cholera, shall be subject to a bacteriological examination of their stools, and to sanitary observation so long as the cholera bacillus is present therein. That convalescents from an attack of cholera shall be kept under observation until the cholera bacillus has disappeared from the stools.

(24) *Resolved*, That the sanitary report to be presented by each delegation at future conferences be handed to the secretary in printed form and in sufficient number to be distributed among the delegates at the preliminary session.

(25) *Resolved*, To recommend that the Sixth International Sanitary Conference include in its program the study of epidemic cerebrospinal meningitis and acute poliomyelitis.

(26) *Resolved*, To reiterate the recommendations made by previous sanitary conferences upon the methods of prophylaxis against plague, insisting specially on the destruction of rats, on land as well as on board vessels.

Some of the above resolutions are considered of special interest, and a few observations thereon will not be out of place. They will be referred to by their numbers.

(1) This is of importance with special reference to the representative character of the delegates appointed by the various Governments to represent them.

(2) The object of the second resolution is to secure unity of action between the information commissions of the several Republics, the International Sanitary Committee of Montevideo, and the International Sanitary Bureau of Washington.

(3) The third resolution is of great importance and its object is the amendment of the Washington convention of 1905. It is the result of a number of resolutions offered by the delegates and of criticisms of the present convention made in the discussions in committee and before the conference. It is apparent that the convention of Washington must be amended in various ways, but especially with reference to cholera, plague, and yellow fever, and it is the intention of the resolution that the International Sanitary Bureau of Washington study and propose definite amendments to the Washington convention, the same to be presented to the Sixth Sanitary Conference at Montevideo for action or adoption ad referendum.

(11) The eleventh resolution relative to the establishment of permanent tuberculosis commissions in the several Republics, and empowering the International Sanitary Bureau of Washington to urge the formation of such commissions through the diplomatic representatives of said Republics in Washington, is worthy of attention in view of the great mortality from tuberculosis and the present world-wide movement to control this disease.

(19) It was maintained by the writer that immunity against yellow fever should not be recognized in quarantine practice. The resolution as adopted does not require that the certificate of immunity be accepted by the interested party, and the writer does not believe that such certificate should be accepted unless vouched for by competent authority.

(20) This resolution, while not of international importance, is in line with the best progressive ideas on the control by government of those factors which have to do largely with the public health.

(23) This resolution puts in practice the precautions taken by the Public Health and Marine-Hospital Service of the United States during the recent outbreak of cholera in Europe and its appearance in the port of New York. In a general way it is con [illegible] provisions of the Convention of Washington and is [illegible] of

the important points to be considered by the International Sanitary Bureau when it undertakes the study of the modification of the Washington convention.

(24) This resolution is of value in order to facilitate the work of the conferences. The report of each delegation should be printed and in sufficient number, so that it may be distributed to the other delegates and to the press. This would lead to a better appreciation of the work presented and to more intelligent discussion. Several of the delegations at the conference had their reports in this form.

Great credit is due Dr. Alejandro del Río, the president, and Dr. Gregorio Ammunátigui, the secretary of the conference, for the work of organization and the admirable way in which they handled the sessions of the conference, which in point of nationalities represented surpassed all others, and in the importance of the resolutions adopted compares favorably with any.

The visiting delegates were the recipients of every courtesy and the utmost hospitality from the Chilean authorities and the people in general.

The appreciation and thanks of the United States delegation are also due to the American minister, Mr. Henry P. Fletcher, and the American consul in Valparaiso, Mr. Alfred A. Winslow, for many courtesies extended.

OPHTHALMIA NEONATORUM.

The records of institutions for the blind show that from 23 to 35 per cent of the inmates have become blind as a result of ophthalmia neonatorum. This is an index, however, only of those who have been made totally blind by the disease. There are at least an equal number of persons who have had their vision impaired to a greater or less degree. The control of ophthalmia neonatorum is especially worthy of attention, as experience has shown that in most cases at least the disease can be prevented by the use of prophylactic measures on the part of the physician or midwife. When cases do develop, the recognition of the seriousness of the affection and the employment of proper treatment will in many instances prevent the loss of vision.

Many of the States have recognized in various ways the need of measures to control the disease. Some have issued instructions regarding the proper methods of prophylaxis and some also furnish packets containing preparations of silver salts for use in the eyes of the new born. The disease is notifiable to the health authorities in the same way as other diseases in Connecticut, Massachusetts, Minnesota, Nebraska, New York, Oregon, South Carolina, Utah, Vermont, and Wisconsin.[1] In certain other States cases are required to be reported by the nurse, midwife, or parents, to the health department only when no physician is in attendance. In these instances no report is required of physicians. In other States reports of cases are to be made by the nurse or other person in charge of the infant to a legally qualified practitioner of medicine, and in still other States the report may be made either to the health department or to a physician.

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[1] Public Health Bulletin No. 45. A Digest of the Laws and Regulations of the Various States Relating to the Reporting of Cases of Sickness. Public Health and Marine-Hospital Service, 1911.

Public Health Bulletin No. 49, Ophthalmia Neonatorum, An Analysis of the Laws and Regulations Relating Thereto in Force in the United States. Public Health and Marine-Hospital Service, 1911.

The laws and regulations of Utah require that physicians and midwives shall report to the local health authorities every case where a newly born child has an inflammation of the eyes accompanied by a discharge. Upon being notified of the existence of a case, the local health officer is to ascertain that proper treatment is being given to the infant. The health officer is also to immediately report the case by telegraph or telephone to the State board of health. The treatment which shall be given is also outlined.

The laws and regulations of Utah are as follows:

UTAH.

[Acts of 1911, ch. 61.]

SEC. 1. It shall be the duty of every physician and every midwife attending a case of childbirth to report to the local board of health every case where the newly born child has inflammation of the eyes attended by a discharge therefrom. Such report to be made within six hours after the appearance of such disease. It shall be the duty of such physician or midwife to treat the eyes of the child so afflicted in accordance with the rules of the State board of health. Every physician and midwife failing to comply with the provisions of this act shall be guilty of a misdemeanor.

[Rules, State board of health.]

Rule 1. No midwife shall treat any case of ophthalmia neonatorum or inflammation of the eyes of a newly born infant unless it is impossible to secure the services of a physician, provided that in case the services of a physician shall be secured a midwife may begin and carry out treatment until his arrival.

Rule 2. In the event that the services of a physician can not be secured, midwives are authorized to use and apply the following treatment:

Immediately upon the discovery in a newly born infant of an inflammation of the eyes, attended by a mattery discharge therefrom, five drops of a 20 per cent solution of argyrol shall be dropped into the eyes with an eye dropper, after having separated the lids with the thumb and finger; and this treatment shall be repeated every hour for four days, and longer if a discharge is still present. After four days, if the discharge has ceased, the treatment may be reduced in frequency to intervals of four times daily for several days, until it is shown that the discharge is not liable to return.

Before each application of the argyrol solution the eyes should be thoroughly irrigated, and cleansed by dropping or pouring into them a 1 per cent solution of chloride of sodium (common salt) or a saturated solution of boric acid. For practical purposes the salt solution may be prepared by dissolving one teaspoonful of salt in a pint of water.

NOTE.—The person treating the eyes should exercise the utmost care to avoid touching the cornea (eyeball), as there is great danger of causing serious injury thereby. In applying the treatment the child should be placed flat upon its back and the head so held that the solution will not quickly escape from the eyes.

Inasmuch as the secretions from the eyes are very infectious, care should be taken to destroy all articles contaminated by them, and to sterilize the hands after each treatment.

The treatment above described is considered by eminent authorities to be entirely effective and safer than solutions of nitrate of silver, and it is recommended to all physicians in general practice.

Solutions of argyrol quickly deteriorate and should be freshly prepared for every case. Upon request the State board of health will furnish materials for preparing fresh solutions.

It is recommended that physicians and midwives shall make one application of the argyrol solution at the birth of every child as a prophylactic or preventive treatment, after having first thoroughly wiped the eyes with absorbent cotton or soft clean linen and bathed them with a saturated solution of boric acid.

Rule 3. On receipt of notification under this act, it shall be the duty of the local health officer to immediately investigate the case and satisfy himself that the rules of the State board of health are properly complied with. He shall also immediat[illegible] report the case to the State board of healt[illegible] one or telegraph.

The following instructive report of the social and medical history of cases of ophthalmia neonatorum treated in the Massachusetts Charitable Eye and Ear Infirmary from 1907 to 1911 appeared in the December, 1911, Bulletin of the Massachusetts State Board of Health, reprinted from the fourth report of social-service work at the infirmary:

OPHTHALMIA NEONATORUM.

By Catherine Brannick, Head Worker of the Social Service Department, Massachusetts Charitable Eye and Ear Infirmary.

It is now four years since the department began the study of ophthalmia neonatorum by securing wherever possible a social and medical history of each case treated in the hospital wards. In that period 388 cases have been under observation.

Following are the more important statistics of these cases:

Place of birth of child:		
At home		320
In hospital		63
Unknown		5
Birth attended by:		
Physician—		
Private	272	
Dispensary	30	
City	3	
Hospital	63	
		368
Midwife		10
Unattended by midwife or physician		3
Unknown		5
Condition of eyes on admission to hospital:		
Cornea clear		321
Cornea involved		67
Condition of eyes on discharge:		
Normal vision		323
Partially blind		42
Totally blind		23
Nationality in 354 cases:[1]		
English-speaking parentage (British Provinces, American, Irish)		218
French Canadian		29
Jewish		31
Italian		25
Colored		23
Swedish		5
Portuguese		5
Polish		4
German		3
Dutch		2
Syrian		3
Lithuanian		1
Greek		1
Unknown		4
Sent to infirmary from—		
Boston		198
36 other Massachusetts towns		151
Other States		3

Statistics of cases of 65 babies who became blind or partially blind are as follows:

Place of birth:	
At home	61
In hospital	4

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[1] Complete record of nationality not kept during first year of study.

Birth attended by—	
Private physician	55
Hospital physician	4
Midwife	3
Unattended	2
Unknown	1
Nationality:	
English-speaking parentage	33
French Canadian	15
Italian	4
Jewish	5
Swedish	2
Polish	2
Syrian	1
Lithuanian	1
Colored	2

In the 4 years during which this study has been going on a systematic campaign of education on this subject has been conducted by private and public institutions in this State and elsewhere. In Massachusetts, especially, the work for the prevention of blindness from this cause has been markedly progressive and far-reaching, and yet in our study of the 109 cases of infant ophthalmia treated at the infirmary during the past 12 months there are included the histories of 8 babies made totally blind and 3 partially blind by this disease. These histories are but repetitions of the histories of other little unfortunates contained in the studies of previous years. In every case the baby was admitted to hospital too late to save the vision; in every case the eye condition had been treated by a physician who had failed to take into account the serious nature of the disease and the necessity of intelligent nursing from the start; in every case the parents had been completely ignorant of the disease and its possible consequences.

In the face of the widespread work for prevention, the histories of these 8 blind babies, the largest number of totally blind noted in a single year since the study began, would make discouraging reading if one did not know the context. During the first year of the study it became evident that our figures could give no indication of the problem throughout the State, as the babies sent to the infirmary practically all came from greater Boston. The law making it obligatory to report such cases to the board of health had then been in force for more than a year, yet one local board of health after another gave information that no cases had been reported and that the board of health itself knew nothing of the disease. Since that time the work of the Massachusetts board of health and of the commission of the blind throughout the State, and that of the Boston board of health in this city, has brought about a very different situation. Very many of the cases treated at the infirmary during the past year were sent there through local boards of health, and the number of cases from the more distant parts of the State has increased each year. In the beginning it was felt that many cases of blindness from ophthalmia neonatorum might have occurred in Massachusetts other than those treated too late at the infirmary or those reported later to the commission for the blind. Facts gathered through the State by the commission for the blind bear out this view. It is probably true, then, that blindness from this cause is in reality decreasing, but that we are much nearer to knowing the actual extent of it in the State.

Further evidence of this may be found in a comparison of the number of babies made partially or totally blind for the following successive years:

Years.	Number under observation.	Number made blind or partially blind.
1907-8	46	12
1908-9	116	29
1909-10	119	13
1910-11	107	11

As the partially blind babies have only sheer good luck to thank for the fact that they are not totally blind, the neglect in practically all of these cases having been quite as flagrant as in the cases of those who suffered complete lo[illegible] the conclusion to be drawn from these figures is very hopeful. Babi[illegible] blind, but the percentage of neglected cases has been cut almost two[illegible] three years. This result has undoubtedly been brought about by the educational campaign conducted by the boards of health of the State and city and by the State Commission for the Blind, perhaps the most concentrated and persistent piece of social work ever attempted on a single subject by public institutions. Although the history of blindness in these babies repeats the same facts this year as in the first year of the study, the after history is quite different. To-day the baby has a hearing; and not alone the living blind baby, but also the dead blind baby and the partially blind baby, whose cases once were not at all considered. The work of prosecuting the responsible persons, begun by the Boston board of health and carried into the State by other institutions, has given the story of the babies the publicity so much needed.

The most unexpected finding in our four years' study has been the fact that the doctors and not the midwives are responsible for blindness from ophthalmia neonatorum. So far as our figures show, however, this is not because midwives have been careful while doctors have been careless, but because the midwife has appeared very little in our figures. Out of the 388 cases under observation, a midwife has attended the birth in only 10 cases. Neglect was shown in 3 of these, a high percentage when compared with the percentage of neglect in cases attended by physicians.

The doctor of Massachusetts, then, must be held responsible, and back of him his medical school. The public social institutions have been able to do much in the way of prevention, but much of their work is necessarily corrective, after the harm has been done. The institutions in the best position to do preventive work are the medical schools, and upon these should be placed the burden of that eternal vigilance which must always be the price of sight for the babies.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BELOIT, WIS.

PRIVIES AND CESSPOOLS—LOCATION, CONSTRUCTION, MAINTENANCE.

SECTION 1. No privy vault or cesspool shall be constructed or maintained within the fire limits of the city of Beloit. All such privy vaults and cesspools are hereby condemned and ordered removed and connection made with the sewer within 60 days from the passage and publication of this ordinance.

SEC. 2. No privy vaults, cesspools, or reservoirs into which any privy, water-closet, stable, sink, or other receptacle or refuse or sewage is drained, shall be constructed or maintained in any situation or in any manner whereby, through leakage or overflow of its contents, to cause pollution of the soil near or about habitations, or of any well, spring, or other source of water used for drinking, or culinary purposes; nor shall overflow from any such reservoir or receptacle be permitted to discharge into any public place, and every such pit, reservoir, or receptacle shall be cleaned and the contents thereof removed at such times and under such precautions as the board of health may prescribe.

SEC. 3. All house sewers or drains for the conveyance of deleterious or offensive matter shall be water-tight, and the plans and methods of their construction shall be subject to the approval of the board of health. In streets or avenues where public sewers are, or shall be constructed, the board of health may order house connections made therewith and when so ordered, such connection must be made within 30 days.

SEC. 4. All privies to be built upon any property abutting upon a street where a sewer is laid shall be so constructed as to discharge their contents into such sewer, unless written authority to do otherwise be granted by the health officer. Any privy built contrary to the provisions of this section is hereby declared to be a nuisance.

SEC. 5. Violation of any of the sections of this ordinance, or refusal to comply with its terms, shall be subject to a penalty of not less than $5 nor more than $25 for each offense and to a like penalty for each day's violation or refusal to comply, after written notice from the health officer.

[Ordinance No. 116 adopted August, 1911.]

GREENSBORO, N. C.

SEWER CONNECTIONS—CONSTRUCTION AND LOCATION OF PRIVIES.

SECTION 1. That section 127a of the printed ordinances of the city be and the same is hereby amended by adding at the end thereof the following:

SEC. 2. That whenever any line of sewer is laid along any street, avenue, or public alley in the city of Greensboro, and the same is ready for use, it shall be the duty of the commissioner of public safety to notify the owners or their agents, and the occupants of all houses, tenements, or other buildings situated on lots abutting upon, or accessible to the street, avenue, or public alley, along which said sewer is laid, to connect all closets, privies, sinks, bathtubs, lavatories, and urinals upon their respective lots with said sewer line, so that the contents of the same may be made to empty into such sewer, within 30 days after date of service of such notice.

SEC. 3. That all owners of improved real estate in the city of Greensboro, which shall be located upon, near, or accessible to any lines of sewer and water, maintained by said city, or abutting any street, avenue, public alley, or way, along which the city sewer and water lines are laid, shall connect with said sewer line all water-closets, bathtubs, lavatories, sinks, urinals, and privies, so that their contents may be made to empty into such sewer.

Sec. 4. That it shall be unlawful for any person, firm, or corporation, to build, erect, construct, keep, or maintain, or cause to be built, constructed, kept, or maintained, any privy or surface closet, on any lot or premises within the city limits abutting any street, avenue, or public alley or way, along which the city maintains a sewer line and water main, or upon any lot accessible thereto.

Sec. 5. That it shall be unlawful to build, erect, keep, or maintain any building to be occupied by one or more persons without providing and maintaining for use of such occupants adequate water-closets connected with the city sewer, so as to empty the contents thereof into said sewer, or without providing a surface privy built according to the specifications adopted by the board of commissioners and furnished by the city building inspector.

Sec. 6. That it shall be unlawful to build any surface privy or dry closet, or cause the same to be built or constructed, on any lot or premises within the city limits, without having first obtained a permit from the city building inspector.

Sec. 7. That no permit shall be granted to build, erect, or construct, or keep or maintain, any surface privy or dry closet on any lot or premises abutting a street, avenue, public alley or way, along which the city maintains a sewer and water main, or on a lot accessible thereto.

Sec. 8. That all privies and dry closets shall be built and constructed according to plans and specifications adopted by the board of commissioners and furnished by the city building inspector.

Sec. 9. That any violation of any of the provisions of the above ordinance shall subject the offender to a penalty of $50 for each offense, and where such violations are continuous, each day shall constitute a separate and distinct offense. [Ordinance adopted Aug. 1, 1911.]

HOLLAND, MICH.

PRIVIES AND CESSPOOLS—LOCATION, CONSTRUCTION, AND REMOVAL OF CONTENTS.

Rule 13. No privy, vault, or cesspool shall be placed or permitted within 50 feet of any well, spring, or other source of water supply used for cooking or drinking purposes. It is also ordered that whenever any well, spring, or source of water supply is deemed unwholesome or unsafe by the board of health, the same shall be put in a safe and wholesome condition, or shall be removed and its use discontinued.

Rule 14. All privy vaults and cesspools shall be cleaned twice a year, viz, between April 1 and June 1, and between October 1 and December 1, of each year, and the contents be collected and removed by a licensed scavenger in tightly covered tank wagons or in barrels approved by the board of health, and conveyed to a place at least one-fourth of 1 mile outside of the city limits, there to be disposed of by the trenching method. The scavenger shall deodorize the contents of the cesspool or vault before removing the same, by mixing with solution of copperas or other approved efficient deodorant. The expense of cleaning out such vault and cesspool shall be paid by the owner, agent, occupant, or tenant of the premises on which the same are located, but in no instance shall the fee charged be more than 50 cents per barrel of 50 gallons capacity, provided the minimum fee for each vault or cesspool shall be 75 cents.

No coarse rubbish, tin cans, metal, glassware, wire, or wood shall be deposited in vaults or cesspools.

Rule 15. All new privies and closets shall be constructed with a drawer so arranged that it can be readily removed and emptied of its contents. When used, sufficient dry earth, ashes, or slaked lime must be used daily to absorb all the fluid parts of the deposit. The maximum fee to be charged for the cleaning out of such drawer shall be 50 cents.

[Regulations, board of health, adopted Oct. 2, 1911.]

ORANGE, N. J.

WATER-CLOSETS AND URINALS—CONSTRUCTION OF FLOORS.

14. The floors of the water-closet and urinal compartments of all toilet rooms in saloons, railroad stations, office buildings, and other public places, shall be water-tight, and shall be constructed of or overlaid with cement, slate, tile, or other nonabsorbent material (wood not being allowed) to permit proper flushing and cleansing of such compartment floors.

15. Sections 20, 58, 59, 60, 61, 63, 64, 67, 68, 84, 86, 125, and 141 of the ordinance to which this ordinance is a supplement are hereby repealed.

[Ordinance, board of health, adopted Oct. 2, 1911, as a supplement to the Sanitary and Plumbing Code adopted Dec. 1, 1900.]

TORRINGTON, CONN.

PRIVIES AND CESSPOOLS—LOCATION AND CONSTRUCTION.

SECTION 4. No privy or cesspool shall hereafter be constructed in the borough of Torrington upon a lot on a street in which there is a sewer or upon a street after the same has been sewered, except such privy or cesspool be connected with said sewer and provided with efficient trap or traps and suitable means for flushing and cleaning the same, to the acceptance of the board of health.

[Ordinance effective July 1, 1911.]

WILMINGTON, N. C.

PRIVIES—CONSTRUCTION, INSPECTION, AND REMOVAL OF CONTENTS.

SECTION 1. It shall be unlawful for any person, firm, or corporation to own, maintain, or rent any privy in the city of Wilmington unless the same shall be so constructed as to prevent the access of flies to the excrement deposited therein, and to protect the soil from contamination, and to permit the easy and proper placing and removal of a receptacle 16 inches in height and 15 inches in diameter, which receptacle will be furnished if requested by the city of Wilmington at cost, and unless the same shall be so located as to be accessible to the city scavenger.

SEC. 2. It shall be the duty of the superintendent of health to cause all privies in the city of Wilmington to be inspected at least once in every 10 days, and a permit for the use of the same shall be given by the superintendent of health to the person, firm, or corporation using or maintaining said privy, when same is kept and maintained in a satisfactory sanitary condition; and if the same is not kept and maintained in a satisfactory sanitary condition, then the superintendent of health shall cause said permit to be revoked unless the same is put in a satisfactory sanitary condition within a reasonable time after notice is given to said person, firm, or corporation keeping or maintaining such privy or privies.

SEC. 3. It shall be the duty of the health department of the city of Wilmington to provide the means and supervise the removal of excrement from the aforesaid privies as often as it may be deemed necessary.

SEC. 4. The city scavenger shall, on removing a receptacle from a privy, replace it immediately by a similar receptacle that has been thoroughly cleaned and disinfected according to the directions of the health officer.

SEC. 5. A charge of 20 cents for each can or 35 cents for two cans in same closet shall be paid for service herein provided for, by the owner or tenant in possession of the property, and the amount so collected shall be used to defray the expense of disinfection of such privies and scavenging done therein when done by the health department of the city.

SEC. 6. Any person, firm, or corporation violating any of the provisions of this act shall be guilty of a misdemeanor, and shall be subject to a fine of not less than $5 nor more than $50.

[Ordinance effective Dec. 7, 1911.]

SOIL POLLUTION—PREVENTION OF.

SECTION 1. That on and after the date of the passage of this ordinance it shall be unlawful for any person, firm, or corporation to deposit upon the surface or bury beneath the surface of the soil within the limits of the city of Wilmington any human excrement, carrion, putrid or decaying animal matter of any sort whatsoever.

SEC. 2. It shall also be unlawful for any person, firm, or corporation to bury beneath the soil within the limits of the city of Wilmington any carcass or body or any part thereof.

Any person violating any of the provisions of this ordinance shall be fined $50 for each and every offense, or imprisoned for not less than 30 days.

All ordinances or parts of ordinances heretofore passed by the council of the city of Wilmington in conflict with this ordinance are hereby repealed.

[Ordinance adopted Sept. 19, 1911.]

CEREBROSPINAL MENINGITIS IN TEXAS.

Surg. Guiteras at Galveston reports the occurrence of 10 cases of cerebrospinal meningitis, with 7 deaths at Galveston from February 23 to 29, inclusive.

At Houston the health officer reports the occurrence of 12 cases, with 4 deaths during the week ended February 17.

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,719 acres of land in Alameda County were covered with poison during the week ended February 17, 1912.

During the same period 4,870 acres of land in San Joaquin County and 3,040 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 18, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Feb. 17, 1912	2	[1] 186	94	....
Oakland	do	20	[2] 655	491	....
San Francisco	do	4	[3] 1,516	1,146	....
County—					
San Joaquin	do	....	[4] 142	142	....
Washington:					
City—					
Seattle	do	....	1,047	1,006	....

[1] Identified: Mus norvegicus, 98; mus musculus, 88.
[2] Identified: Mus norvegicus, 525; mus rattus, 5; mus musculus, 124; mus alexandrinus, 1.
[3] Identified: Mus norvegicus, 681; mus rattus, 222; mus musculus, 37; mus alexandrinus, 236.
[4] Identified: Mus norvegicus, 134; mus rattus, 3; mus alexandrinus, 5.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED MAR. 8, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
***Alabama:**				
Montgomery	Feb. 18-24	1	....	
Arizona:				
County—				
Cache	Jan. 1-31	20	....	
Florida:				
Counties—				
Alachua	Feb. 11-17	2	....	
Duval	do	21	....	
Hernando	do	2	....	
Marion	do	3	....	
Orange	do	6	....	
Pasco	do	1	....	
Putnam	do	36	....	
St. Johns	do	12	....	
Suwanee	do	1	....	
Washington	do	1	....	
Total for State		85	....	
***Louisiana:**				
New Orleans	Feb. 18-Mar. 2	14	....	
Mississippi:				
Counties—				
Benton	Jan. 1-31	1	....	
Covington	do	4	....	
Holmes	do	2	....	
Lauderdale	do	15	....	
Lincoln	do	1	....	
Newton	do	20	....	
Yazoo	do	1	....	
Total for State		44	....	
***Missouri:**				
St. Louis	Feb. 18-24	1	....	

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended Mar. 8, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
New York:				
Counties—				
Allegany	Jan. 1-31	13		
Cattaraugus	do	10		
Cayuga	do	13		
Chautauqua	do	2		
Chemung	do	4		
Cortland	do	6		
Erie	do	6		
Franklin	do	11		
Genesee	do	6		
Monroe	do	5		
New York	do	9		
Oneida	do	1		
Onondaga	do	3		
Steuben	do	1		
Suffolk	do	1		
Tioga	do	77		
Wyoming	do	10		
Total for State		178		
*Rhode Island:				
Central Falls	Nov. 1-30	1		
Do	Feb. 1-28	2		
Warwick (town)	Nov. 1-Dec. 31	269		
Total for State		272		
South Dakota:				
Counties—				
Brookings	Jan. 1-31	8		
Brown	do	7		
Davison	do	3		
Lincoln	do	8		
Minnehaha	do	1		
Total for State		27		
*Tennessee:				
Knoxville	Feb. 18-24	11		
Texas:				
Counties—				
Anderson	Jan. 1-31	1		
Cameron	do	1		
Cherokee	do	50		
Collin	do	1		
Comal	do	5		
Hale	do	3		
Palo Pinto	do	4		
Panola	do	5		
Reeves	do	3	1	
San Patricio	do	7		
Tarrant	do	13	3	
Wichita	do	2		
Total for State		95	4	
Grand total for the United States		748	4	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED FEB. 17, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	239	14		5		24	1			41	28	6	3
Boston, Mass	670,585	258	41	1	119	9	31	4			76	20	5	
Chicago, Ill	2,185,283	826	136	14	49	1	159	9			112	99	11	1
Cleveland, Ohio	560,663	159	31	5	28	1	26		1		19	14	1	1
New York, N. Y	4,766,883	1,604	230	35	859	10	369	15	1	1	448	210	31	10
Philadelphia, Pa	1,549,008	602	63	14	13	3	33				73	63	16	2
Pittsburgh, Pa	533,905	195	19	2	8		20				28	20	4	1
St. Louis, Mo	687,029	253	28	2	22		27	1			43	25	9	2
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	184	18	3	9		9		3		7	13	2	
Cincinnati, Ohio	364,463	155	11	2	3		29	2	2		39	20		
Detroit, Mich	465,766	164	18	24			28	1						
Los Angeles, Cal	319,198	136	9	2			22	2	9		18	17	3	1
Milwaukee, Wis	373,857	124	14		29		37	2			15	6	30	2
Newark, N. J	347,469	98	12			1					25	15	2	
New Orleans, La	339,075	179	5		1		10		16		39	19	2	
San Francisco, Cal	416,912	140	2		276	2	7				32	11	3	1
Washington, D. C	331,069	146	7		5		5				24	20	6	
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	56	13		4		9					12		1
Jersey City, N. J	267,779	88		4								9		1
Kansas City, Mo	248,381	30	6		2		4		5		3	4	1	
Providence, R. I	224,326	66	12		11	2	12		1		6	4		
Seattle, Wash	237,194	46	5		2		2		1		2	3		3
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	23	2		4	1	7				1	1		
Columbus, Ohio	181,548	63	5		39		17				5	14	1	1
Dayton, Ohio	116,577	40	3	1	2		1		4			5	4	
Fall River, Mass	119,295	44	3	1	2		5				3	2		
Grand Rapids, Mich	112,571	33					4				3	2	7	
Lowell, Mass	106,294	42	2		22	2	8				7	5	1	
Nashville, Tenn	110,364	37	1				1				5	4		1
Oakland, Cal	150,174	44	2	1	2							6		
Omaha, Nebr	124,096	40	4				1						1	
Richmond, Va	127,628	73	5	1	5		5				6	12	1	
Toledo, Ohio	168,497	55	9		24		11		1			6	1	2
Worcester, Mass	145,986	48	5		1		13				7	6		
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	22	3	1										
Bayonne, N. J	55,545	10	2				9				3	1		
Brockton, Mass	56,878	18			41		3				1			
Camden, N. J	94,538		4	1			5				9	3		
Duluth, Minn	78,466	18		1			8		1			2		
Elizabeth, N. J	73,409	20	5		2		10				1	4	1	
Erie, Pa	66,525	15	1								3	3		
Evansville, Ind	69,647	14	2	1					1			3	4	
Fort Wayne, Ind	63,933	22			7							1		
Harrisburg, Pa	64,186	32	1		14						3	4	2	1
Hartford, Conn	98,915		11		5		10	1			6	2		
Hoboken, N. J	70,324	6	3								3			
Houston, Tex	78,800	39	3									6		
Johnstown, Pa	55,482	27	1	1							4	2		
Kansas City, Kans	82,331		2		1						3		6	
Lawrence, Mass	85,892	28	1	1			1				2	5	1	1
Lynn, Mass	89,336	18	3		13		5				7		2	
Manchester, N. H	70,063	16	6		4						1	1		

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 17, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Con.														
Oklahoma City, Okla	64,205	12	3										3	
Passaic, N. J	54,773	20	3	2	3		2				1			
Pawtucket, R. I	51,622											3		
Reading, Pa	96,071	55	4	1			2						3	
Saginaw, Mich	50,510		5	1			2				1		2	1
San Antonio, Tex	96,614	50	23		3							5	2	1
South Bend, Ind	53,684	14	1	1			1					3	2	
Springfield, Ill	51,678	15	4				1		2			1	1	
Springfield, Mass	88,926	33	2		24		7	1			1	2		
Trenton, N. J	96,815	40	1				2				10	5	3	
Wilkes-Barre, Pa	67,105	21	1		34						6	1		
Wilmington, Del	87,411	35										4		
Yonkers, N. Y	79,803	26	2		5		20				8	4	2	
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	6	3	1	1		2							
Auburn, N. Y	34,668	19												
Aurora, Ill	29,807	11	7	1										
Binghamton, N. Y	48,443	28			1							2		
Brookline, Mass	27,792	6			1		1				1	1		
Butte, Mont	39,165	30			1		3					5		
Chattanooga, Tenn	44,604						1				2			
Chelsea, Mass	32,452	15			6		2		1		1	2		
Chicopee, Mass	25,401	7			1		1					1	2	
Danville, Ill	27,871	15	1									2		
Dubuque, Iowa	38,494	6					3							
East Orange, N. J	34,371	5	2		2		5				1			
Elmira, N. Y	37,176	10	5										1	
Everett, Mass	33,484	14	1		2		1				3	2		
Haverhill, Mass	44,115	12	3		6	1	3					1	1	
Kalamazoo, Mich	39,437	15			1		4							
Knoxville, Tenn	36,346	16	1						2		2	2		
La Crosse, Wis	30,417	5	5				1		1		1		1	
Lancaster, Pa	47,227				1		2				3			
Lexington, Ky	35,099	16			4		1					4		
Lima, Ohio	30,508	7			3							1		
Lynchburg, Va	29,494	13	2		9		1					2		
Malden, Mass	44,404	13	3		3		7				2			
Montgomery, Ala	38,136	26	2		11		1					3		1
Newcastle, Pa	36,280		6										10	
Newport, Ky	30,309	7	1				2				2	2		
Newton, Mass	39,806	11			5		1				1		1	1
Niagara Falls, N. Y	30,445	8					2					1	1	
Norristown, Pa	27,875		1	1	98		2							
Orange, N. J	29,630	7	1				4							
Pasadena, Cal	30,291	8							1			1		
Pittsfield, Mass	32,121	14	8	1	1						1	1		
Portsmouth, Va	33,190	15							5					
Racine, Wis	38,002	15	2	1			1							1
Roanoke, Va	34,874	10	2		64		2		1		3			1
Rockford, Ill	45,401	15	1				1					2	119	2
Salem, Mass	43,697	19			2		6				3	2		
San Diego, Cal	39,578	8	1		2		2				7	7	1	
South Omaha, Nebr	26,259	9	1											
Superior, Wis	40,384	4	1											
Taunton, Mass	34,259	15	2		1							1		
Waltham, Mass	27,834	10	1	1	9						1	2		
West Hoboken, N. J	35,403		2		2						1			
Wheeling, W. Va	41,641	20	1								2	2	1	1
Williamsport, Pa	31,860	16	1				1						2	
Wilmington, N. C	25,748	13			3				1					
York, Pa	44,750										7			
Zanesville, Ohio	28,026	12	2									4	3	1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 17, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	8					3							
Beaver Falls, Pa	12,191		1								1		3	
Bennington, Vt		4												
Braddock, Pa	19,957	6					4							
Butler, Pa	20,782	13												
Cambridge, Ohio	11,327	6									1			
Camden, S. C		1												
Carbondale, Pa	17,040	5												
Clinton, Mass	13,075	2									1			
Coffeyville, Kans	12,687												1	
Columbus, Ga	20,544	7										1		
Concord, N. H	21,497	6			3									
Cumberland, Md	21,839	9	2		1						8		2	
Dunkirk, N. Y		7												
Galesburg, Ill	22,089	2												
Gloucester, Mass	24,398	8		1										
Harrison, N. J	14,498	4												
Kearny, N. J	18,659	5			10		1							
La Fayette, Ind	20,081	9			1	1								1
Lebanon, Pa	19,240										1			
Logansport, Ind	19,050	3	1				1							
Manistee, Mich							11						1	
Marlboro, Mass	14,579	5	1				1							
Massillon, Ohio		4										1		
Medford, Mass	15,715	10	1		3		1					1		
Moline, Ill	24,199	7										1		
Melrose, Mass	15,715	4			15									
Montclair, N. J	21,150	5					3				2			
Morristown, N. J	12,507	2										1		
Nanticoke, Pa	18,507	4	1		13						1			
Newburyport, Mass	19,240	9									1			
North Adams, Mass	22,012	7	2	1	1							1		
Northampton, Mass	19,431	9									1	1		
Ottuma, Iowa	22,012	8					1				2	1		
Palmer, Mass		1									1	1		
Peekskill, N. Y		4												
Plainfield, N. J	22,050	7	1		49		6					2		
Pottstown, Pa		9			2		2							
Saratoga Spring, N. Y		6												
South Bethlehem, Pa	19,973	6			6	1					1			
Steelton, Pa	14,246	5	3		1				1		3			
Warren, Pa	11,081	1	1											
Wilkinsburg, Pa	18,924	6					1				2	1		
Woburn, Mass	15,308	6	1		18									

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

Florida.—Reports from the State board of health show as follows: Week ended February 17, 1912. Diphtheria present in 6 localities with 15 cases, malaria in 2 localities with 5 cases, smallpox in 10 counties with 85 cases, tuberculosis in 7 counties with 12 cases, typhoid fever in 3 localities with 14 cases.

Week ended February 24, 1912. Diphtheria present in 5 localities with 10 cases, malaria in 3 localities with 16 cases, smallpox in 7 counties with 50 cases, tuberculosis in 5 localities with 5 cases, typhoid fever in 8 localities with 18 cases.

MICHIGAN.—Month of January, 1912. Reports from the State department of health show 311 cases of diphtheria, 69 of measles, 557 of scarlet fever, 267 of smallpox, 158 of tuberculosis, and 96 of typhoid fever.

TEXAS.—Month of November, 1911. Population, 3,896,542. Total number of deaths from all causes 2,336, including diphtheria 6, measles 4, scarlet fever 2, smallpox 24, tuberculosis 224, typhoid fever 93. Cases reported: Diphtheria 171, scarlet fever 102, smallpox 12, tuberculosis 53, typhoid fever 120.

FOREIGN AND INSULAR.

CHINA.

Hongkong—Cholera.

Consul Anderson reports the occurrence of 1 fatal case of cholera at Hongkong during the week ended January 20.

Plague—Examination of Rats.

Surg. Brown reports: During the week ended January 20, 1 case of plague occurred at Hongkong. During the same period 1,671 rats were examined for plague infection. No plague-infected rat was found.

GREAT BRITAIN.

Bradford—Cerebrospinal Meningitis and Poliomyelitis made Notifiable.

Consul Nicholls reports: The Bradford city council have made cerebrospinal meningitis and poliomyelitis notifiable from April 1, 1912.

Glasgow—Measles.

The American consul reports the prevalence of measles at Glasgow as follows: December 15–29, 1911, 1,853 cases, with 50 deaths; month of January, 1912, 3,680 cases, with 96 deaths; February 1–15, 1912, 2,961 cases, with 114 deaths.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910. The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911, a fatal case February 9, 1912, and 2 fatal cases February 25, 1912.

The last plague-infected rat was reported found at Honokaa, February 29, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

	Week ended Feb. 3.	Week ended Feb. 9.
Total rats and mongoose taken	502	686
Rats trapped	491	445
Mongoose trapped	11	25
Rats shot from trees		16
Rats examined bacteriologically	450	389
Classification of rats trapped:		
Mus alexandrinus	81	54
Mus musculus	100	168
Mus norvegicus	52	63
Mus rattus	258	400
Classification of rats shot from trees:		
Mus alexandrinus		4
Mus rattus		12
Average number of traps set daily		1,720

Mosquito-eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy:

Mosquito-eradication measures conducted at Honolulu from Jan. 22 to 27, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Cleaned.	Oiled.	Drained.	Emptied.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.
Gutters, house	3,453	94	317	21				563		
Gutters, street	137	8		89						1
Standing water	343	39	80	63	34		30			
Cesspools	356	1	14	89						
Privy vaults	623		22	84						
Holes and low places	319	23	91	16			36			
Catch basins	179	1	12			12				
Leaky fixtures	101							61		
Plants, etc	469	20								
Swamps	15	3								
Ponds	20	5								
Troughs and tanks	154	4	4			9				
Tubs or other receptacles	261	1	2			35				
Tins, cans, bottles	416	27								
Water barrels	184	14				18			21	
Vacant houses		22								

Mosquito-eradication measures conducted at Honolulu from Jan. 29 to Feb. 3, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Cleaned.	Oiled.	Emptied.	Filled.	Ordered repaired.
Gutters, house	923	6	88				90
Gutters, street	15	12		9			
Standing water	288	130	7	169		1	9
Cesspools	45	16		7			
Privy vaults	105						
Holes and low places	13						
Catch basins	837	17					
Leaky fixtures	22						16
Swamps	6	1		1			
Troughs and tanks	47	6	1	7	15		
Tubs or other receptacles	79	4					
n cans and bottles	60	1			1		
er barrels	233	79		214	19		
t houses	6						

Mosquito-eradication measures conducted at Honolulu from Feb. 5 to 10, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Ordered cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.	Gallons of oil.
Gutters, house	1,188	27	173	3	18				74			13
Gutters, street	111	15	4	59	2	1			1		2	21½
Standing water	971	74	35	32	35	18		27	1		9	33
Cesspools	343	17	9	30				5	27			
Privy vaults	797	2	2	27				3	58			
Holes and low places	619	105	5	110	9	9		251			29	5
Catch basins	742	2	11	3				3	1			1
Leaky fixtures	77								40			
Plants	99											
Swamps	27	2						1				
Ponds	11											
Troughs and tanks	186	18	2		6	10			1		5	
Tubs or other receptacles	509	51	21		20	94	50		15	6	8	
Tin cans and bottles	706	31	10			280	37					
Water barrels	343	42	6			39				28		
Vacant houses and yards	224	2		1								
Grease traps	87		6									

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports cholera and plague in India as follows: Week ended January 13, 1912. At Calcutta, 28 deaths from cholera and 12 from plague; in all Bengal, 1,443 cases of plague with 1,126 deaths; in all India, 13,201 cases of plague with 10,910 deaths.

Week ended January 20, 1912. At Calcutta, 50 deaths from cholera and 13 from plague; in all Bengal, 2,020 cases of plague with 1,562 deaths; in all India, 14,745 cases of plague with 12,046 deaths.

ITALY.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo week ended Feb. 10, 1912.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Feb. 6	Mongibello	New York			
8	Italia	do	205	20	280
9	Berlin	do	1,441	270	1,950
	Total		1,646	290	2,230

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Feb. 5	Athinai	New York			
9	Italia	do	183	180	125
10	Berlin	do	273	180	250
	Total		456	360	

SPAIN.

Almeria—Typhus Fever.

The American consul reports the occurrence of a death from typhus fever during the month of January, 1912.

ZANZIBAR.

Zanzibar—Examination of Rats.

Consul Weddell reports: During the two weeks ended January 21. 1,623 rats were examined for plague infection. No plague-infected rat was found.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED MAR. 8, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies	Nov. 26-Dec. 2	[1] 761	638	
India:				
Calcutta	Jan. 14-20		59	
Madras	Jan. 21-27	15	13	Madras Presidency, Dec. 1-30: Cases, 6,557; deaths, 4,130.
Indo-China:				
Saigon	Jan. 9-15	63	49	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.[2]
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops.
Acre	Jan. 21	7	6	In vicinity.
Turkey in Europe:				
Constantinople	Feb. 2-3	2		

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	Jan. 21-Feb. 3		5	
Pernambuco	Jan. 1-15		2	

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Para	Jan. 29-Feb. 10		2	
China:				
Hongkong	Jan. 14-20	1		
India:				
Bombay	Jan. 21-27	17	16	
Calcutta	Jan. 14-20		13	
Karachi	Jan. 21-27	7	7	
Indo-China:				
Saigon	Feb. 9-15	2		
Java:				
Pasoeroean Residency	Jan. 14-20	6	4	
Mauritius	Dec. 8-14	2	1	
Straits Settlements:				
Singapore	Jan. 7-13	2	2	

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[1] Bulletin Quarantenaire d'Egypte, Feb. 8, 1912.
[2] From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, Feb. 14, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended Mar. 8, 1912.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Oran	Jan. 1-31	2	1	
Brazil:				
Pernambuco	Jan. 1-15		65	
Rio de Janeiro	Jan. 14-20	1		
Santos	Dec. 12-23		1	
Canada:				
Quebec	Feb. 18-24	11		
China:				
Hongkong	Jan. 14-20	42	29	
France:				
Marseille	Jan. 1-31		3	
Paris	Jan. 29-Feb. 3	7		
Germany	Feb. 4-17	13		
Great Britain:				
London	Feb. 4-10	2		
India:				
Bombay	Jan. 21-27	50	15	
Calcutta	Jan. 14-20		1	
Madras	Jan. 21-27	8	4	
Italy:				
Leghorn	Feb. 11-17	8		
Naples	Jan. 29-Feb. 10	12	1	
Palermo	do	236	80	
Japan:				
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Mexico:				
Guadalajara	Feb. 11-17	2		
Manzanillo	Feb. 18-24	1		
Porfirio Diaz	Feb. 11-24	2	2	
Tampico	Feb. 10-20		2	
Russia:				
Moscow	Jan. 21-27	4	1	
St. Petersburg	Jan. 14-27	17	6	
Turkey in Asia:				
Beirut	Jan. 29-Feb. 10	370	20	

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAR. 1, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37.
Bacs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24-Nov. 27: Cases, 876; deaths, 529.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India:				
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Calcutta	Nov. 5-Feb. 6		300	
Madras	Nov. 26-Jan. 20	418	344	Madras Presidency, Dec. 1-31: Cases, 3,879; deaths, 2,412.
Rangoon	Oct. 1-Nov. 30	6	3	
Indo-China:				
Saigon	Nov. 20-Jan. 8	1,058	773	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 1, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Italy				Total June 8-Dec. 31; Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 31			Present.
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, [illegible]; deaths, 42, including report, p. 2094, vol. 1.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 96; deaths, 51, including report, p. [illegible], vol. 1.
Belgrade, district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Dec. 30		[illegible]	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	
Tripoli:				
Tripoli	Oct. 25-Nov. 10			150 to 200 among the civil population and 25 to 30 among the military, Dec. 21, 1911.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, [illegible]; deaths, 396.
Beja district	Nov. 25-Dec. 7	30	25	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Turkey in Asia and Europe Total Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople.
Adana	Dec. 2-6	16	5	
Aleppo	Jan. 26-Feb. 3	16	8	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	6	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,646; deaths, 1,585.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Jan. 21	6	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 1, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	Nov. 19–Jan. 6		8	
Para	Dec. 9–16	1	1	
Ecuador:				
Bucay	Nov. 16–30	2		
Duran	Dec. 1–15	3	2	
Guayaquil	Nov. 16–Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Espita	Dec. 31–Jan. 6	1		
Maxcanu	do	1		
Merida	Nov. 12–Feb. 3	15	9	Total Aug. 1–Feb. 3: Cases, 60; deaths, 29.
Puerto Mexico (Coatzocoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4–7			7 cases in the lazarettó from s. s. Ikalis from Guayaquil.
Temax	Dec. 31–Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19–25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16–Jan. 15	25	8	
La Guaira	Feb. 27			Present.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17–23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Brazil:				
Bahia	Sept. 1–30		2	
Para	Dec. 24–Jan. 27	18	10	
Pernambuco	Oct. 16–Jan. 16		4	
Rio de Janeiro	Nov. 12–Dec. 23	6	3	
British East Africa:				
Kismayu	Oct. 15–25	2		1 case pneumonic.
British South Africa:				
Durban	Jan. 17	2	1	
Chile:				
Iquique	Nov. 12–Jan. 6	10	4	
Pisagua	Nov. 1–30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9–Jan. 13	7	5	
Dutch East Indies:				
Java				Total Mar. 1–Dec. 9: Cases, 1,777; deaths, 1,262.
Pasoeroean Residency, Malang District.	Nov. 12–Jan. 13	66	32	
Soerobaya	Oct. 17–27	2		
German East Africa:				
Dar-es-Salaam	Nov. 13–15	1	1	From the interior via Bergamogo.
Ecuador:				
Guayaquil	Nov. 16–Dec. 15	102	42	
Egypt				Total Jan. 1–Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1–25	12	9	Sept. 11–16: Cases, 50; deaths, 28.
Assouan	Jan. 1–Feb. 25	1	1	
Behera	Jan. 1–25	3	2	Sept. 11–16: Cases, 11; deaths, 8.
Fayoum	Jan. 1–26	1		
Galioubeh	Jan. 1–Feb. 8	1	1	Oct. 5–Dec. 26: Cases, 1.
Garbieh	Jan. 1–25	1		
Kena	do	1	1	Nov. 20–Dec. 13: Cases, 3; deaths, 3.
Minieh	do	3	2	Dec. 13: Cases, 1
Hawaii:				
Honakaa	Feb. 9–25	3	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 1, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 19-Jan. 20	80	70	
Calcutta	Nov. 11-Feb. 6		46	
Karachi	Nov. 26-Jan 20	39	37	Total, year 1911: Cases, 3,2 deaths, 3,046.
Rangoon	Oct. 1-Nov. 30	38	39	
Bombay Presidency and Sind.	Oct. 29-Dec. 30	35,557	25,898	
Madras	Jan. 1-6	1	1	
Madras Presidency	Oct. 29-Dec. 30	4,687	3,770	
Bengal	do	3,893	2,827	
United Provinces	do	12,279	10,459	
Punjab	do	1,229	895	
Burma	do	206	187	
Central Provinces	do	6,883	5,234	
Coorg	do	75	43	
Mysore State	do	4,913	3,801	
Hyderabad State	do	10,830	10,098	
Central India	do	4,242	3,486	
Rajputana and Ajmere Merwara.	do	457	362	
North West Province	Oct. 29-Dec. 9	1	1	Total for India, Oct. 29-Dec. 30: Cases, 85,243; deaths, 66,997. Total, year 1911: Cases, 838,5 deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Jan. 1	21		
Java:				
Kediri	Nov. 26-Dec. 2	1	1	
Madioen	do	5	5	
Mauritius	Nov. 3-Dec. 7	36	26	
Peru:				
Departments—				
Callao	Oct. 1-21	1		In November 1 case, in January cases with 2 deaths.
Chiclayo	do	12	4	
Chosika	do	1	1	
Lambayeque	do	3		
Libertad	do	8		
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Dec. 2		2	
Straits Settlements:				
Singapore	Nov. 5-Jan. 6	17	16	
Turkey in Asia:				
Jiddah	Jan. 13-15	2		

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Arabia:				
Aden	Nov. 28-Jan. 15	5	3	And vicinity.
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	Oct. 1-Nov. 30		31	
Austria-Hungary:				
Bohemia	Jan. 14-20	1		
Galicia	Dec. 24-30	1		
Krain	Jan. 14-20	7		
Trieste	Dec. 3-9	1		From s. s. Baren Call from Beirut.
Tyrol	Jan. 14-20	1		
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Dec. 31		323	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Jan. 6	3	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 1, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
British Columbia—				
Nelson	Dec. 24-30	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-20	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Feb. 17	60		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-Feb. 10	2	1	
Windsor	Feb. 4-10	2		
Quebec—				
Montreal	Dec. 17-Feb. 17	20		
Quebec	Dec. 10-Feb. 17	224	1	
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Iquique	Dec. 10-16	2		
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		Jan. 20—Present.
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chungking	Nov. 18-Jan. 6			Present.
Hongkong	Nov. 12-Jan. 13	127	97	
Nanking	Dec. 10-Jan. 27			Do.
Shanghai	Dec. 11-Jan. 21		3	
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-Jan. 14	3		
France:				
Marseille	Nov. 1-30		1	
Paris	Dec. 3-Jan. 27	56	5	
Germany				Total, Dec. 31-Feb. 3: Cases, 10.
Hamburg	Jan. 21-27	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
London	Jan. 14-Feb. 3	2	1	
India:				
Bombay	Nov. 19-Jan. 20	87	51	
Calcutta	Nov. 19-Feb. 6		17	
Madras	Nov. 26-Jan. 20	48	29	
Rangoon	Oct. 1-Nov. 30	29	9	
Indo-China:				
Saigon	Nov. 13-Jan. 15	24		
Italy:				
Genoa	Dec. 1-Jan. 31	33	2	
Leghorn	Dec. 16-Feb. 10	83	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-Jan. 27	50		
Palermo	Nov. 26-Jan. 27	1,946	655	
Turin	Jan. 15-Feb. 4	3		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	1	1	Jan. 20, 1 case from s. s. Suveric from Hongkong.
Java:				
Batavia	Nov. 12-Jan. 20	24	5	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Feb. 11		5	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Feb. 10		2	
Juarez	Dec. 19-Feb. 10	9	4	
Magdalena	Dec. 23-Feb. 7		47	Feb. 7, 62 cases present.
Mazatlan	Dec. 11-Jan. 30		9	Feb. 13, 33 cases in the lazaretto.
Mexico	Nov. 26-Jan. 13	46	25	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Feb. 3		30	
San Antonio	Jan. 1-21	12	9	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 1, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
San Carlos	Jan. 1-21			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Dec. 2	3		
Tampico	Dec. 1-Feb. 10		8	
Tapachula	Nov. 1-Dec. 31		14	
Portugal:				
Lisbon	Dec. 9-Feb. 10	28		
Russia:				
Batum	Dec. 1-31	1		
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Jan. 20	22	8	
Odessa	Nov. 26-Jan. 13	10	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-Jan. 27	16		Oct. 1-Nov. 30; deaths, 2.
St. Petersburg	Nov. 19-Jan. 27	95	14	
Warsaw	Nov. 5-Dec. 2		185	
Siam:				
Bangkok	Nov. 5-Dec. 30		626	
Siberia:				
Omsk	Jan. 1-31	7		
Spain:				
Cadiz	Nov. 1-Dec. 31		14	
Madrid	Dec. 1-Jan. 31		3	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-31		5	
Valencia	Dec. 3-Feb. 10	149	11	
Straits Settlements:				
Singapore	Nov. 19-Jan. 13	18	7	
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Feb. 3		35	
Turkey in Asia:				
Beirut	do	285	47	
Turkey in Europe:				
Constantinople	Dec. 4-Feb. 4		53	
Uruguay:				
Montevideo	Sept. 1-Nov. 30	23	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 23-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Feb. 10	163,084	54								1			2
Aguascalientes	Feb. 18	40,000	36	2					1					
Aix-la-Chapelle	Jan. 20	157,485	60	3								3	1	2
Barcelona	Feb. 12	591,272	295	36						4			1	1
Amsterdam	Feb. 10	580,962	101	22						2		2	1	7
Antwerp	Feb. 3	309,839	72	5						1	1			1
Beirut	do	80,000	20					19		5				
Belfast	Feb. 10	385,492	313	30						1		3		15
Belgrade	Feb. 3	90,060	28								3			
Birmingham	Feb. 10	842,512	411								1	2		16
Bombay	Jan. 27	977,822	687	33	16			15					14	
Bordeaux	Feb. 10	253,000	124	16									5	
Bradford	do	289,618	96	7						1		1		
Bremen	Jan. 27	246,850	91	10							4	2	2	
Brussels	Feb. 3	649,846	249	23						1	1	1	2	1
Budapest	Jan. 27	1,000,000									3	6	3	1
Cairo	Jan. 21	689,439	513	28					1	3		9		
Calcutta	Jan. 20	890,493	496	31	13	50		1						
Catania	Feb. 9	200,000	75	2								1	2	
Cologne	Feb. 3	525,671	165	22								2	6	
Colombo	Jan. 13	227,026	167	15						7			2	
Do	Jan. 20		140	14						3				
Constantinople	Feb. 11	1,000,000	250	35				6		5	3		3	
Copenhagen	Jan. 27	465,000	144	21									1	2
Denia	Feb. 10	12,431	6	1							1			
Dublin	Feb. 3	406,536	184	31						1	2	2	2	1
Dresden	Jan. 27	555,000	158	31								2		
Dundee	Feb. 10	171,006	80	6								1		
Edinburgh	do	321,200	139	9									2	
Erfurt	Jan. 27	125,000	37	3								3		
Ghent	Feb. 3	166,235	69	5								1		
Glasgow	Feb. 15	785,000	400							1		5	49	7
Gothenburg	Feb. 3	170,100	53	2								2		1
Guadalajara	Feb. 17	119,468	[illegible]									1		
Hamburg	Feb. 3	953,079	284	33							2	9	2	
Hanover	Jan. 21	302,200	81	12							1	2		1
Havre	Feb. 10	136,159	57	18								1	6	
Hongkong	Jan. 20	336,488				1		29				3		
Hull	Feb. 10	282,987	95							1		2		
Karachi	Jan. 27	148,000	108		7								17	1
Kharput	Jan. 20	21,000		1						1				
Kingston	Feb. 24	21,000	10	1										
Konigsberg	Jan. 27	251,000	87	9									4	2
Leeds	Feb. 10	445,568	183	8								2	1	2
Leipzig	Jan. 27	605,755	166	17							2	3		
Libau	Feb. 4	90,000								1				
Liverpool	Feb. 10	752,055	388	81							4	2	2	8
London	do	7,340,125	2,647							5	4	22	28	43
Lubec	do	100.000	46	9						2				
Madras	Jan. 27	518,660	533			13		4					3	
Manaos	do	52,000	48	3			1							
Do	Feb. 3		49	6			4							
Manchester	Feb. 10	631,533	384	34							1	2	18	75
Montreal	Feb. 24	466,197	150	19						2	2	2		
Moscow	Feb. 27	1,500,000	713	104				1	2	13	16	16	3	
Munich	Jan. 27	610,000	168	25									3	
Nagasaki	Jan. 28	179,257	42	3								1		
Nagoya	Jan. 20	419,434	153							1		1		
Do	Jan. 27	420,763	172							1		1		
Nantes	Feb. 11	170,531	89	13								1		
Nottingham	Feb. 3	260,000	92	10									4	2
Odessa	do	546,000	191	34				1	6	1	1	5	5	
Palermo	do	340,000	186	7				53						
Do	Feb. 10		184	5				27	1	3	1			
Port Elizabeth	Jan. 20	30,692	13	1								1		
Para	Feb. 3	185,000	69	7	3									
Do	Feb. 10		79	11	2									
Paris	Feb. 3	2,888,110	1,102	254						6	2	8	16	8
Porfirio	Feb. 17	16,000	5					1						

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Prague	Feb. 27	225,204	97	14	....	....	....	....	....	....	....	....	1	1
Rangoon	Jan. 20	289,342	177	....	4	3	....	2	....	....	....	....	....	....
Rio de Janeiro	Jan. 13	912,169	378	66	....	....	....	....	....	....	....	....	5	[illegible]
Do	Jan. 20	921,987	373	79	....	....	....	....	....	....	....	....	4	[illegible]
Do	Jan. 27	....	330	74	....	....	....	....	....	....	....	1	2	[illegible]
Saigon	Jan. 15	220,000	....	....	....	49	....	....	....	....	....	....	....	....
Singapore	...do....	303,328	207	17	....	2	....	3	....	3	....	....	....	....
St. Petersburg	Jan. 20	1,907,708	787	127	....	....	....	1	1	16	18	15	38	[illegible]
Do	Jan. 27	....	843	149	....	....	....	5	....	14	20	11	32	[illegible]
San Pedro	Jan. 20	10,000	4	1	....	....	....	....	....	....	....	....	....	1
Santa Cruz de Teneriffe	Feb. 3	46,000	11	....	....	....	....	4	....	....	....	....	....	....
Southampton	Feb. 10	120,891	41	3	....	....	....	....	....	....	....	1	....	
Stettin	Jan. 27	237,000	64	7	....	....	....	....	....	....	....	1	....	....
Do	Feb. 3	....	81	6	....	....	....	....	....	....	1	1	1	....
Stockholm	Jan. 27	343,839	102	20	....	....	....	....	....	....	2	2	2	[illegible]
Stoke-on-Trent	Feb. 3	237,153	108	5	....	....	....	....	....	1	1	1	3	[illegible]
Do	Feb. 10	....	99	1	....	....	....	....	....	....	....	1	2	....
Talcahuano	Jan. 27	28,000	5	1	....	....	....	....	....	....	....	....	1	[illegible]
Do	Feb. 3	....	6	2	....	....	....	....	....	....	....	....	1	[illegible]
Tampico	Feb. 20	23,452	39	7	....	....	....	2	....	....	....	....	....	....
Tientsin	Jan. 27	425,000	19	5	....	....	....	....	....	....	....	1	1	1
Trieste	...do....	233,599	117	....	....	....	....	....	....	....	....	....	1	[illegible]
Turin	Feb. 11	430,770	163	19	....	....	....	....	....	2	....	....	3	1
Valencia	Feb. 10	240,000	132	4	....	....	....	1	....	....	....	....	....	....
Venice	Nov. 4–Dec. 30	200,000	515	56	....	....	....	....	1	45	1	5	1	....
Vienna	Jan. 27	2,064,583	714	88	....	....	....	....	....	1	3	2	10	4
Winnipeg	Feb. 17	151,958	57	2	....	....	....	....	....	....	3	2	2	
Yokohama	Feb. 5	419,630	....	....	....	....	....	....	....	1	....	2	....	....

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

AUSTRIA-HUNGARY—*Brunn*.—Month of December, 1911. Population, 108,944. Total number of deaths from all causes, 248, including diphtheria 8, measles 7, scarlet fever 2, tuberculosis 50, typhoid fever 2.

BRAZIL—*Santos*.—Two weeks ended December 23, 1911. Population, 8,500. Total number of deaths from all causes, 63, including smallpox 1.

DUTCH GUIANA—*Paramaribo*.—Month of January, 1912. Population, 37,475. Total number of deaths from all causes, 105. No contagious diseases.

EAST AFRICA—*Mombasa*.—Month of December, 1911. Population, 26,000. Total number of deaths from all causes, 46, including tuberculosis 1.

GREAT BRITAIN.—Week ended February 3, 1912.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 18.6 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 24.6 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Sligo, viz, 4.7, and the highest at Clonmel, viz, 35.5 per 1,000.

Scotland.—The deaths registered in 18 towns correspond to an annual rate of 19.1 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Motherwell, viz, 7.5, and the highest at Ayr, viz, 23.3 per 1,000. The total number of deaths from all causes was 797, including diphtheria 12, measles 55, scarlet fever 5.

ITALY—*Messina.*—Month of January, 1912. Population, 127,000. Total number of deaths from all causes 149, including diphtheria 1, scarlet fever 3, smallpox 1, tuberculosis 10.

JAPAN—*Formosa.*—Four weeks ended January 20, 1912. Population, 3,341,217. Total number of deaths from all causes not reported. The deaths include diphtheria 4, typhoid fever 11.

MALTA.—Two weeks ended January 27, 1912. Population, 213,395. Total number of deaths from all causes 189, including diphtheria 1, measles 1, tuberculosis 8, typhoid fever 2.

RUSSIA—*Libau.*—Month ended January 13, 1912. Population, 90,000. Total number of deaths from all causes, not reported. The deaths include diphtheria 6, scarlet fever 4, typhoid fever 1.

SPAIN—*Almeria.*—Month of January, 1912. Population, 50,910. Total number of deaths from all causes, 129, including diphtheria 1, tuberculosis 9, typhus fever 1.

Madrid.—Month of January, 1912. Population, 584,117. Total number of deaths from all causes, 1,491, including diphtheria 19, measles 19, scarlet fever 1, smallpox 2, tuberculosis 144, typhoid fever 21.

TURKS ISLANDS.—Two weeks ended February 17, 1912. Population, 1,675. Total number of deaths from all causes 3. No contagious diseases.

VENEZUELA—*La Guaira.*—Two weeks ended January 31, 1912. Population, 10,000. Total number of deaths from all causes, 25, including tuberculosis 8, typhoid fever 1.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

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THE BACTERIOLOGICAL DIAGNOSIS OF CHOLERA.

A REPORT PRESENTED TO THE PERMANENT COMMITTEE OF THE INTERNATIONAL OFFICE OF PUBLIC HYGIENE IN THE NAME OF A COMMISSION COMPOSED OF: MESSRS. RUFFER, president; CALMETTE, GAFFKY, GEDDINGS, MURILLO, PRAUM, AND POTTEVIN, reporter.

Translated from the French by H. D. Geddings, Surgeon, Public Health and Marine-Hospital Service, and American delegate on the permanent committee of the International Office of Public Hygiene.[1]

CONCLUSIONS.

The methods applicable at the present time to the investigation and identification of the cholera vibrio permit the skilled bacteriologist to positively assert a diagnosis of cholera under conditions of sufficient certainty for the needs of prophylaxis.

Practically the rule may be adopted to consider as truly choleraic every choleriform vibrio in which one or the other of the two following characteristics is recognized:

1. Agglutination in the proportion of 1 to 1,000 at least, by a cholera serum, the activity of which is 1 to 4,000 or more.
2. Positive Pfeiffer reaction.

Every choleriform affection presenting symptoms of gastro-enteritis in which is encountered a vibrio answering to this definition, should hence be considered as a case of cholera.

When it is a question of first suspicious cases appearing in a country heretofore free of cholera, it is indicated to prove the vibrios by one or the other of the two reactions above given.

If in a locality there appear repeated attacks of a disease presenting the clinical symptoms and anatomo-pathologic lesions of cholera and the bacteriological examination reveals in the feces of the patients and in the intestinal contents of cadavers a choleriform, vibrionic flora, even if the vibrios isolated are not agglutinable in the proportion of 1 to 1,000 and do not give the Pfeiffer reaction, it is indicated in these exceptional conditions to repeat the bacteriological examinations until all doubt is removed.

The proof of the existence of the cholera vibrio in persons presenting no clinical signs or anatomo-pathologic lesions does not necessitate a declaration of the existence of cholera.

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[1] The International Office of Public Health was established as the result of an agreement between the countries signatory to the arrangement signed at Rome, Dec. 9, 1907. The work of the office was placed under the authority and control of an international committee composed of technical representatives designated by the participating countries, one representative for each country. The committee assembled for the first time at Paris, Nov. 4, 1908. The members of the committee keep in touch with the office at all times, in order that they may be able to decide intelligently the questions which may from time to time arise.

Bacteriology has not at its disposal at the present time any reactions permitting the establishment in a definite, practical manner of the differentiations between various cholera vibrios.

It would be neither possible nor desirable to fix a technique limited by strict rules for the various operations of bacteriological examinations, but the following general indications may be recommended as permitting in the great majority of cases a positive diagnosis within 24 to 36 hours:

1. When mucous flakes are available for examination a microscopical investigation of the same, in stained preparations and in the hanging drop.

2. The isolation of the vibrios, employing for the purpose agar media, at a temperature of 37° C.

(*a*) Plant plates of ordinary suitably alkalinized agar and of Dieudonné's medium, using for the latter a risiform particle, or an equivalent quantity of feces.

(*b*) Plant in 50 c. c. of peptone solution 1 c. c. of fecal matter. After a stay of six hours in the incubator (or 12 to 18 hours if need be), at 37° C. take several loopsful from the surface and plant with them several plates of Dieudonné medium and ordinary agar.

(*c*) Investigate the agglutination reaction, using drops for the purpose, from the isolated colonies, the properties belonging to cholera vibrios, and secure pure cultures.

3. Demonstrate the character of the vibrios obtained in pure culture, by the reaction of agglutination or that of Pfeiffer.

The conditions are much more favorable to the discovery of vibrios if pathological materials (feces or intestinal contents) are collected as early in the attack as possible, or secured from the cadaver as early as possible after death. Examinations made of the small quantity of material collected by a sound introduced into the rectum, in the living body, or from the cadaver are unreliable. It is sometimes possible to recognize that a person even in good health has undergone an attack of cholera by determining whether his blood serum gives with a genuine cholera vibrio the immunity reactions, viz, agglutination or the reaction of Pfeiffer.

(The above conclusions were unanimously adopted by the commission. At the meeting of October 9, 1911, the permanent committee likewise adopted them unanimously.)

DISCUSSION AND HISTORICAL REVIEW.

The bacteriological diagnosis of cholera is established by the finding of the specific vibrio, discovered by R. Koch, in the suspected products (feces, intestinal contents, sometimes vomited matter). To be justified in pronouncing a positive diagnosis, the vibrio must have been isolated, obtained in pure culture, and recognized by its reactions.

We may recognize an attack of cholera by those reactions which the blood of the patient gives with the specific vibrio. But the property of giving these reactions, besides being inconstant, only appears slowly, while on the contrary it persists for quite a long time after cure, and often permits the establishment of a retrospective diagnosis.

I.

When cholera shows itself with its classical gastro-intestinal syndrome, the rice-water stools of the acute period represent very frequently cultures pure, or almost so, of the vibrio of Koch. It is specially abundant in the desquamated masses of cells which constitute the so-called "grains of rice."

If the disease is prolonged, in proportion as the acute stage is left behind, the ordinary bacteria of the intestine appear, and predominate more and more in the feces, as well as in the intestinal contents. In benign or atypical cases, among bacillus carriers, healthy or convalescent from cholera, the vibrios may be very scarce, and represent sometimes a few individual organisms, nested in the mass of bacteria which constitute the intestinal flora. Their discovery is then very delicate, and demands all the competence of the skilled bacteriologist.

At the necropsy of subjects dead during the acute period the vibrio is met with in abundance in the contents of the small intestine, principally in the layer of flaky mucus, formed of desquamated epithelial cells, which coats the surface of the intestine. It may penetrate into the intestinal walls and invade the cells of the villi and tubular glands, or even reach the superficial layers of the lymphatic follicles. It is not to be found in the other organs or in the blood.

According to observations recently made in man, and in cases of experimental cholera in the young rabbit, the vibrio may invade the biliary passages. Its persistence in these organs may be the origin of the prolonged excretions which are sometimes noted among bacillus carriers.

Microscopical examination of pathological products may often furnish in a few moments very useful indications (1):[1]

Diluting a little of the product to be examined in a drop of sterile water or bouillon and examining between slide and cover glass, preferably with ultra-microscopic illumination, the vibrios may be discerned and recognized by the peculiar liveliness of their movements. Colored preparations, made in the beginning from flakes of mucus, often preserve a characteristic appearance, to the importance of which Koch drew particular attention:

> According to the gravity of the case and the stage of the disease, the choleraic bacteria are met in preparations of this sort, perhaps in absolutely pure or nearly pure culture, perhaps mixed with ordinary intestinal bacteria, principally the *Bacterium coli*, in all possible proportions up to those in which, microscopically, the presence of curved rods can no longer be revealed.
>
> If one has to do with a pure culture of cholera bacilli, or if the latter are accompanied only by the *Bacterium coli* but are themselves in superior number, then the cholera bacilli are as a general rule grouped in the places where they have been deposited in filaments from the mucus, in groups of a characteristic form. In fact they constantly constitute little masses, in which all the bacilli have uniformly the same direction, so that one might believe that he was looking at a troop of these bacilli following each other in files, like fish in still water. If in preparations the characteristic groupings are wanting, but if, however, the vibrios appear in culture, pure or nearly so, it may be considered as extremely probable that one is dealing with a case of cholera (2).

In 1905 the Institute for Infectious Diseases in Berlin examined 2,565 samples of suspected pathological products, with 251 positive results. In 33 cases (13 loops of intestine and 20 specimens of stools) the microscopic examination alone led to a positive diagnosis. This was confirmed 30 times by subsequent investigations. Twice the vibrios isolated showed themselves nonagglutinable, and once it was impossible to obtain a culture of the vibrios which had been shown in the preparation.

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[1] For explanatory notes to which the numbers in parenthesis refer, see end of report.

It is only in those cases where the vibrios are very abundant in the products submitted to examination, that direct planting upon solid media renders it possible to obtain at the first stroke pure and isolated colonies. As a general rule it is necessary to have recourse to preliminary cultures of enrichment, and these ought to be put in course of preparation, systematically and at the beginning of each research (3).

It is sufficient generally to plant in peptone solution about 1 cubic centimeter of fecal matter. But as it may happen that a trial made under these conditions remains negative, vibrios may still be isolated when a larger quantity is used; 5 cubic centimeters, for example.

In some cases, however, a positive result can not be obtained except by making the experiment upon much larger quantities. Gaffky relates that in six researches made upon materials collected at necropsy examinations made according to the ordinary methods having remained negative, in four instances he succeeded in isolating the cholera vibrio by planting the entire contents of a loop of intestine in a liter of peptone water.

For a long time gelatine media were the most used for the isolation of cholera vibrios, starting from the original material or from enrichment cultures in peptone water. Hence, specially for the reason of the typical appearance which in general surrounds colonies of cholera vibrios in such media, they have been considered as constituting an important diagnostic element (4).

Gelatin plates had also another interest. R. Koch had defined cholera as "a state peculiar to man in which the intestine contains vibrios, cultivable in 10 per cent nutrient gelatin, and producing therein a moderate liquefaction," and it is certain that no other human disease is known, producing feces the planting of which upon gelatin plates gives rise to such a development of liquefying colonies. The acute gastro-enterites due to paratyphoid infections, or to food poisonings, which are the most frequent among those simulating the choleraic syndrome, subjected to bacteriological test, deport themselves in an entirely different fashion.

To-day the elements of diagnosis, drawn from the more or less characteristic appearance of plates or colonies, have only a quite secondary value compared with the precise and certain indications furnished by immunity reactions. Gelatin media have no other interest, therefore, than permitting a practical separation of vibrionic colonies. From this point of view they are inferior to agar-agar media, with which operations made at 37° C. furnish equally good results in a much shorter time.[1]

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[1] For all operations relating to the bacteriologic diagnosis of cholera it is indicated to use an agar-agar of an alkaline reaction. A very convenient degree of alkalinity is obtained by adding to each 100 c. c. of medium, neutral to litmus, 3 c. c. of a 10 per cent solution of sodium carbonate.

The colonies of the cholera vibrio upon ordinary agar-agar are less characteristic than those upon gelatin; nevertheless a practiced eye can often recognise them in the midst of colonies belonging to the common bacteria of feces. They form upon the surface of the agar flat disks, transparent, and of a grayish blue color, while the others are globular and opaque. They can be made use of at the end of six to eight hours in the incubator at 37° C. The plantings ought to be made in streaks, or by flooding the surface of the solidified medium.

In order to render the research of vibrionic colonies upon plates easier, by eliminating as far as possible the common species, various elective media have been proposed.

In a series of publications the first of which goes back to 1893, Deycke had attempted to have adopted a medium elective for cholera, the principle of which was the employment of an alkaline solution of gelatin, with the addition of 0.75 per cent of soda; but its use never became general. In 1909 Dieudonné published the formula of a new medium, which had more success, and which has been found, to have added a real perfection to the methods employed in the search for vibrios (5).

The medium of Dieudonné has been largely used in the course of cholera epidemics in 1910, notably in Italy. This is the opinion expressed by Gosio in a communication to the Academy of Medicine of Rome upon the value and the conditions of its use:

> The total number of researches made upon feces coming from cholera patients, from suspects, from convalescents, and from persons simply exposed to the contagion, amounts to several thousands. The results have shown in an incontestable manner the advantages of the method.
>
> From the point of view of prognosis of cases, it has been possible to distinguish, according to whether the vibrios are few or numerous.
>
> When the vibrios are abundant, as is the case with cholera feces, colonies planted directly upon the blood agar, with one loopful per plate, were already visible to the naked eye and could be used for specimen plantings at the end of 6 to 8 hours. In favorable cases, in less than 12 hours, the vibrio of cholera could be isolated and identified by agglutination.
>
> There exist microorganisms which develop upon the Dieudonné medium as well as the cholera vibrios. Such were certain specimens of colon, certain cocci and coccobacilli, and at Barletta, toward the end of the epidemic, a small diplobacillus became exceedingly common on the plates.
>
> When the vibrios are few in number, as happens among convalescents and bacillus carriers, direct planting (feces to plates) is not to be recommended, as giving in every case less constant results. It is better in these cases to make a preliminary enrichment culture in peptone water, and to practice subsequently the separation upon the blood agar, which thus preserves all of its advantages.

Crendiropoulo and Madame Panayotatou endeavored to find a medium which would permit the elimination of the *B. pyocyaneus*, which in the course of the cholera epidemic of 1902 had shown itself particularly annoying in the researches for vibrios, to which it added sometimes insurmountable difficulties. They succeeded in making one upon which the pyocyaneus had scarcely commenced to grow at the end of 36 hours, while the vibrios gave useful colonies in 18 hours (6).

Up to the last few years, apart from the characteristics already mentioned as to morphology and appearance of cultures on gelatine and agar, the production of indol and the action of cultures upon laboratory animals were considered as indispensable to a diagnosis (7).

It used to be held that the property of giving the indol reaction belonged to all species of cholera vibrios. This rule may be regarded to-day as very general, though not absolute. There are exceptions. Thus, for example, the observations collected at St. Petersburg in 1908–9 show that of 588 specimens of specific vibrios of human origin, and proved as such by the immunity reactions, 55, or very nearly 10 per cent, did not give the reaction. Among the vibrios originating in waters, the proportion of nonreacting rose to 20 per cent.

It was also considered as an important character of the cholera vibrio to possess a strong virulence for the guinea pig, by intraperitoneal injection. It is known to-day that some vibrios, which by their origin as well as by their immunity reactions are to be regarded as those of true cholera, are almost completely inactive, while vibrios, positively noncholeraic, on the contrary, show themselves extremely virulent.

A number of vibrios are pathogenic for pigeons on deep intramuscular injection, while this property is generally wanting in vibrios isolated from choleraic stools. This is a negative characteristic which merits to be held in mind.

Experimentation by the mouth upon the spermophile or the young rabbit, which are susceptible to contracting an infection very similar to human cholera, is not a procedure generally practicable in current research. Moreover, the indications furnished have not as precise a significance as might a priori be assumed. The fact that a microbial culture may produce a choleriform infection in the spermophile or the young rabbit is not to be interpreted per se as meaning that it can give rise to an epidemic of human cholera. To justify such a conclusion there should be an aggregation of facts, epidemiologic and experimental, to show that such infections can not result from the absorption of common organisms. Now, these facts do not at present exist in science. The results obtained by Metchnikoff with the vibrios of Versailles, of which later mention will be made, are in favor of a contrary opinion.

From all that has been previously said it may be concluded that morphological characteristics, cultural peculiarities, and facts drawn from the action upon laboratory animals, do not furnish the means of certainly defining the cholera vibrio. None of them in fact is fixed and pathognomonic. Moreover, there have been isolated from many media, notably waters, very many vibrionic species which can not be distinguished from those isolated from cholera intestines, and which yet can not in view of their frequency of occurrence be considered as on any account capable of producing cholera.

These uncertainties of diagnosis which have been revealed by science, and the specificity of the Koch vibrio and epidemiologic facts, such as the existence of healthy bacillus carriers, the most modern researches only have been able to confirm. All this simply means that the chances of error of which it is necessary to take account, are not as great as might be believed, and are no greater than can be in a large measure corrected by the skill of the bacteriologist and his highly specialized competence.

The question of the identification of the cholera vibrio has entered upon a new phase with the introduction into bacteriological technique of the immunity reactions, as a consequence of the labors of Pfeiffer and Isaief, of Gruber and Durham, and of Bordet.

The serum of an animal immunized against a vibrio exercises upon this vibrio a specific action, which is manifested when it is added to a vibrionic emulsion, by the immobilization of the microbes; their agglutination into large flakes, leaving a clear liquid; and finally by the disintegration (bacteriolysis) of their cells, which are partially dissolved, and of which only spherical granules remain.

The specific activity of a serum may be quantitatively expressed by the extent of the dilution in which it is capable of producing the phenomena of agglutination and bacteriolysis, under given conditions and in a given time.

The first experiments made, notably by Dunbar, in order to determine whether the manner in which it acted in the presence of the serum of an animal immunized with a cholera vibrio would give a diagnostic point useful in the identification of a suspected vibrio, had already given positive results. But it was the fundamental work published in 1903 by Kolle and Gotschlich, with the collaboration of Hetsch, Lentz, and Otto, which definitely established the high practical value of the bacteriolysis (reaction of Pfeiffer) and agglutination, for the bacteriological diagnosis of cholera (8).

The work of Kolle and E. Gotschlich was carried out on 87 species of vibrios; 77 had been isolated by Gotschlich at Alexandria during the epidemic of 1902, from patients or suspects; 4 were well known species of Koch vibrios, which by reason of their origin and their characteristics must be considered as truly choleraic; 1 in particular (*vib. Pfeiffer*) had produced an accidental choleraic infection, absolutely typical and very severe; 2 were paracholeraic, well known (*vib. Metchnikkovi* and *vib. Nordhafen*).

Agglutination experiments with the serum of rabbits, normal or immunized with the vibrio of Pfeiffer gave the following results:

Normal serum only produced agglutination in very large doses, which were practically the same for all vibrios.

Immune serum permitted the classification of vibrios into two distinct groups, comprising:

Group A.—Vibrios which were only agglutinated by doses of the serum such as it was necessary to employ when operating with the normal serum (1–20 to 1–50). None of them gave the reaction of Pfeiffer. Some of them presented the general characters of the vibrio of Koch; others differed from it clearly. Several were polyciliated.

Group B.—Vibrios agglutinable by very weak doses of serum (1–1,000 to 1–20,000). All the vibrios of this group, which comprised four species considered as choleraic, presented the characters of the vibrio of Koch, and were monociliated. All of these for which the Pfeiffer reaction was tried reacted positively.

Agglutination experiments, controlled, made by trying against all vibrios, the serum of rabbits vaccinated with one of them, led to the conclusion that when the immunizing vibrio was one of group A, the agglutinating power was evident with that microbe alone, or exceptionally with one or two others. For the serums prepared with vibrios of group B the agglutinating power was not sensibly displayed against those of group A, but in group B there was no difference to be noted between the immunizing vibrio and the others; the power was manifested against all in the same dilutions.

These facts are clearly shown in the tables below given:

TABLE I.—*Maximum agglutinating power for the normal serum of various species of animals against the vibrios of groups A and B, the immunization being made in all cases with the v. Pfeiffer.*

	Goat.		Ass.		Horse.		Rabbit.		Ox.	
	N. S.	I. S.	N. S.	I. S.	N. S.	I. S.	N. S.	I. S.	N. S.	I. S.
Group A	200	200	50	100	200	200	50	50	50	(?)
Group B	50	2,000	20	5,000	200	2,000	20	20,000	50	(?)

N. S.—Normal serum. I. S.—Immune serum.

TABLE II.—*Agglutinative power of immune serums from rabbits immunized with one of the vibrios of group B in the presence of various vibrios of the same group.*

Number of vibrios used in immunization of animals.	Numbers of vibrios subjected to agglutination test.										
	I	II	VI	VII	XI	XII	XIX	XXII	XXVI	XXVII	XXIX
I	5,000	20,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	2.000
II	5,000	20,000	1,000	1,000	1,000	1,000	1,000	1,000	2,000	1,000	1,000
VI	10,000	20,000	2,000	2,000	5,000	2,000	5,000	2,000	5,000	5,000	2,000
VII	10,000	20,000	5,000	2,000	2,000	1,000	1,000	1,000	2,000	5,000	5,000
XI	5,000	20,000	5,000	2,000	2,000	2,000	5,000	10,000	5,000	5,000	5.000
XII	20,000	20,000	10,000	10,000	5,000	2,000	5,000	2,000	20,000	20,000	20,000
XIX	2,000	10,000	1,000	1,000	2,000	2,000	1,000	2,000	2,000	1,000	1.000
XXII	5,000	20,000	5,000	2,000	5,000	2,000	2.000	2,000	2,000	2,000	2.000
XXVI	5,000	20,000	5,000	1,000	2,000	1,000	2,000	1,000	2,000	2,000	2,000
XXVII	10,000	20,000	1,000	1,000	2,000	2,000	2,000	1,000	2,000	2,000	2.000
XXIX	5,000	10,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	5,000

One would therefore be constrained to think that the organisms of group B constitute one and the same species, viz, the cholera vibrio the others representing distinct species without any relation to it.

This conception has been taken as a base for the bacteriologic diagnosis of cholera, not only by laboratories of scientific research, but also in the regulations established by sanitary administrations. Innumerable observations collected in the past eight years have established in the most absolute manner its high practical value.

It has therefore been established on the one hand that the indications furnished by the two reactions of agglutination and bacteriolysis are always in perfect concordance; on the other hand, that every one of the vibrios which react positively in the presence of a cholera serum, when used for the immunization of animals, gives a serum active for all the others, and for these alone. These facts which apply to thousands of vibrios isolated from positive cases of cholera, under the most varied conditions of time and place, are thus very much in favor of a characteristic, specific unity to be attributed to the entire group of vibrios which give the positive reaction.

In the case of characteristically clinical cholera, happening in the midst of epidemics, vibrios of positive reaction are, so to speak, never wanting. Where in the case of repeated analyses, carried out on pathological material of the acute period, they have not been found it is to be considered that their number does not exceed the total of failures which must be counted on, with even the very surest methods of bacteriological research.

Among healthy individuals vibrios with positive reactions are encountered, especially in the vicinity of cholera patients. Outside of such conditions they are found more rarely in proportion as the researches are made upon individuals among whom the chances of specific infection are more uncertain.[1]

As to media outside of the human body, vibrios of positive reaction have hardly ever been found save under conditions where soiling by choleraic products was, if not evident, at least possible.

Although everybody is in accord in recognizing the diagnostic value of the immunity reactions, especially that of agglutination, which by reason of its ease of execution is generally employed, this standard has not been everywhere adopted as regards the interpretation of the results of experiments.

The German regulations of 1907 specify that the agglutination should be considered as positive and should be regarded as showing the culture to be truly choleraic when a clear agglutination is produced in dilutions corresponding to the limit of power of the immune serum employed.

The instructions of the Italian Government consider as choleraic every vibrio which is proved to be agglutinable in a dilution corresponding to the maximum power of the serum.

In France the instructions addressed to the laboratories charged with the examination of suspected material in 1910 directed that a vibrio should be considered as choleraic which was agglutinated by a serum in a dilution of 1–2,000, the power of which was in the proportion of 1–4,000, or thereabouts.

It would be profitable to eliminate the differences, and to settle upon a basis of interpretation which would be acceptable to all.

Any rule which has for its end to regard as conclusive only those agglutinations produced in dilutions corresponding to the extreme power of the serums appears to us to be too delicate.

Table II shows that in the experiments of Kolle and Gotschlich the vibrios of group B presented very variable agglutinabilities in the presence of the same immune serum, and that the most agglutinable were not necessarily the homologous vibrio.

The order in which they might be classified in the order of their increasing sensitiveness does not always remain the same when the serum used in the experiment varies.

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[1] The following figures are given for the sake of example:

(a) At St. Petersburg, from Dec. 4, 1908, to Dec. 4, 1909, there was examined the fecal matter of 9,357 individuals isolated on account of the appearance of cholera in the apartment in which they dwelt; 577 were found to be carriers of the specific vibrio. From Dec. 4, 1909, to Dec. 2, 1910, out of 3,173 persons examined, and who had been exposed to the infection in proximity to choleraic patients, there were found:

	Number of persons examined.	Total number of bacillus carriers.	Percentage of carriers.
Adults	2,368	157	6.6
Children, 1 to 15 years	720	71	9.8
Children under 1 year	85	17	20.0

(b) The systematic examinations practiced in Germany in 1910 at the frontier upon all boatmen coming from Russia revealed only 3 carriers of bacilli among more than 5,000 individuals.

At Naples in 1910 examinations were made of the feces of all emigrants embarking for America who came from infected communes. Out of about 2,000 individuals, 12 carriers of specific vibrios were discovered

Under these conditions it is obvious that the determination of the extreme power of a serum is found to be dependent upon the choice which may be made of the vibrio chosen for the experiment, and a source of error may result in the diagnoses to be subsequently made with this serum.

If serum XII is taken as an example: In testing it with the cultures I, II, XXVI, XXIX, and applying at the end with rigor the rule of the extreme of power, it would be found that it would lead to considering as noncholeraic a number of vibrios given in the table, and especially the very vibrio which was used in the preparation of the serum.

Moreover it must be borne in mind that the interpretation of an agglutination comprises, as was shown by Ruffer at the last session of the international committee, a personal coefficient which is not to be neglected. The extreme limit of the same serum, under conditions otherwise identical, may vary with different bacteriologists.

The results of the experiments of Kolle and Gotschlich, summarized in Tables I and II, as well as innumerable other observations made in the course of the last few years, warrant the deduction of the following conclusions: With serums strongly agglutinative, the power of which reaches 1–4,000, the agglutinative power for common vibrios does not as a general rule exceed 1–50, rarely reaching 1–200; agglutinations in dilutions of 1–500 have been only very exceptionally observed. Cholera vibrios, on the contrary, are found to be agglutinable in dilutions varying between 1–1,000 and 1–20,000.

It appears, therefore, that a rule might with advantage be adopted to regard as choleraic every vibrio which is agglutinated in 1–1,000 at least by a serum the activity of which is 1–4,000 or over. For vibrios agglutinable by a cholera serum only in stronger dilutions comprised, say, between 1–1,000 and 1–500, the results should be considered as doubtful.

As concerns the Pfeiffer reaction, consideration should be had for the indications given previously in the note on technique, when the vibrio permits recourse to the procedure of Pfeiffer; in other cases the reaction should be made according to the method of Bordet, using the same basis for the interpretation of results.

II.

The practical value of determination of species, based upon the immunity reactions being recognized and regarded as beyond discussion, can it be considered that its adoption resolves in a complete manner the problem of the identification of the cholera vibrio?

The question may be considered as leading to two others, which may be thus expressed:

1. If in the analysis of suspected materials there are found vibrios in which the reaction of agglutination and the Pfeiffer reaction are negative, even though they be in pure culture or at least in sufficient abundance to justify the suspicion of a vibrionic infection, ought the diagnosis of cholera nevertheless to be excluded on the ground that they are positively incapable of producing a choleraic infection?
2. Ought all vibrios of positive reaction to be considered as choleraic in the same force in spite of the fact that bacteriology can not establish differentiations between them, based upon other characteristics, to which in practice it is necessary to pay some attention?

These questions must now be considered successively.

A number of observations which have been made in relation to epidemics, and in scientific literature, tend to show that when one is confronted by a suspected case in which bacteriological examination reveals the presence of a vibrionic flora, and the vibrios found are not agglutinable, it would be imprudent to commit one's self to a negative diagnosis without the most ample information.

The old authors were all in accord in recognizing that in the course of a cholera epidemic diarrheas were very frequently observed in which it was impossible to assert whether they were of a specific or ordinary nature. Often after one or two days they evolved into an attack of true cholera, and were then spoken of as preliminary diarrhea.

As Gaffky remarked at the last session of the committee, these diarrheas of doubtful diagnosis, which were formerly very numerous, notably at Hamburg in 1892, are now much more rare, thanks to the perfection of bacteriological technique, but they have not as yet totally disappeared from our statistics.

In 1910 the city of St. Petersburg was free from cholera for the month of January. But between January and June, the time at which the first new cases of cholera were demonstrated and bacteriologically confirmed, cases of gastro-enteritis were received in hospital, some acute, and sometimes followed by death. In April these cases went on increasing in very large proportion, but bacteriological examination did not always show any vibrios, or, if they were found, they were not agglutinable by a specific serum. Later, when cholera had been declared epidemic, the cases of gastro-enteritis without specific vibrios did not cease. The two epidemic manifestations (as had already been the case in 1908 and 1909) continued side by side.

The total number of cases of acute gastro-enteritis observed in 1910 was 1,849, as compared with 4,600 cases of cholera. It sometimes happened that in the same house there were cases of cholera and cases classed as gastro-enteritis.

It could not but be thought that a number of the cases of gastroenteritis observed before, during, and after the epidemic were themselves also of choleraic nature.

Several times researches made in St. Petersburg, in the contacts of cholera patients or among persons coming from infected districts, showed the presence of carriers of nonagglutinable vibrios in numbers equal to or even higher than carriers of the agglutinable vibrios.

In 1908, at Manila, McLaughlin found out of 376 persons exposed to cholera infection 27 carriers of specific vibrios and 46 carriers of the nonspecific varieties.

In 1911, at Alexandria, the feces of 5,050 persons coming from infected countries were examined. Twelve carriers of specific vibrios and 14 carriers of the nonspecific were found.

It has already been stated that the work of Kolle and Gotschlich was carried out upon 77 vibrios isolated during the epidemic of 1902 in Egypt from the stools of persons presenting suspicious symptoms of cholera or having been in contact with cholera patients; 18 of these vibrios did not enter into the group of true cholera. They came from 14 persons whom, in their memoirs, Gotschlich classes as follows: Five were certainly choleraic; five were apparently not. As to the other four, nothing could be said in view of the insufficiency of the information.

Thus, therefore, in cases of certain cholera bacteriological examination would have disclosed only nonspecific vibrios. According to Kolle and Gotschlich, this would be due to errors of manipulation. Isolations upon plates would have given in special cases mixtures of vibrionic colonies, belonging some of them to specific species and others to common varieties, and it would have been found that at the moment of transference some plantings would have been taken accidentally from common varieties. This hypothesis admitted, it would be interesting to verify by experiments made by examining each time a sufficient number in order that in cases where nonagglutinable vibrios were found it might be decided whether they existed accidentally alongside of specific vibrios or whether they constituted, themselves alone, the entire vibrionic flora; and, as a second alternative, in seeking by means of reciprocal reactions of these vibrios and the serum of patients whether they might not be considered as the true agents of the infection.

Certain peculiarities would appear to indicate that such researches would present a special interest, had they been followed, in an edemic country, during the periods which precede the beginning of an epidemic of cholera, and upon all first cases.

It is a very general rule that the biologic properties of a microbial species vary in a large measure with its history. None presents a sufficient fixity to constitute by itself the necessary and characteristic attributes. Agglutination by a specific serum ought not to be considered an exception to the rule, and there is no reason to think a priori that its power may be reduced below that of the common species, without the vibrio having lost at the same time its pathogenic properties for man.

The instructions issued by the minister of the interior of France to the laboratories charged with the final examination of suspected material after having stipulated as has been seen, further added that every vibrio agglutinable by the specific serum furnished in the proportion of 1 to 2,000, was to be considered as true choléra, and also stated the following reservation:

> Attention has been drawn to the fact that a certain number of vibrios do not agglutinate at all, or agglutinate badly at the time when they have just been isolated from the human economy or from waters, and that they only acquire this property after a certain number of passages made daily upon artificial media. It would be well therefore, such a case arising, to repeat every day the agglutination experiments, and to defer considering as choleraic every vibrio isolated from a case presenting the clinical aspects of cholera and possessing the other characteristics so well known of the cholera vibrio.

So far as is known, instances of vibrios, classed at the time of their isolation as common species, which acquired later characteristics which obliged them to be considered as choleraic by reason of a high agglutinative power, have up to the last few years been very rare. According to the observations made in 1909 and 1910 at St. Petersburg, and the recent work of Zlatogaroff, they would be even less. This observer examined the stools of 1,540 persons, either convalescents from cholera or persons in good health, but who had been in contact with cholera, and found nonagglutinable vibrios 82 times. Of these 82 vibrios, 55 were subjected to various procedures, in consequence of which 45 became agglutinable, and had to be considered as choleraic. Vibrios isolated from stools of cholera patients and from water have alike been rendered agglutinable. All these vibrios without exception were mono-ciliated, and presented otherwise the general characteristics of the cholera vibrio.

The observations of Zlatogaroff would lead to extending very much the limit of the reservation formulated in the French instructions, so far as concerns nonagglutinable vibrios. Nevertheless they might not justify a conclusion reaching beyond a suspicion of cholera as long as a vibrio with positive reaction had not been isolated. It must not be forgotten in fact that an abundant vibrionic flora may be encountered in diarrheal affections having no relation with cholera.

Observation has well established as a fact that vibrionic species are rarely met with, and then always in small number, in human feces of healthy individuals in temperate climates, even though they are in the course of a gastrointestinal condition. Such is not the case in hot or tropical countries. Observations made at Tor show that if the feces normally are in general practically free from vibrios, these are found frequently and often in great abundance in diarrheal feces; in other words, that one had always to deal with an ordinary diarrhea or a diarrhea attributable to a specific cause, such as dysentery.

In the course of researches made in 1905 and 1906 at the lazaretto of Tor, and of which mention must be made later, Gottschlich isolated in association with agglutinable vibrios some other species which did not agglutinate, and did not give the Pfeiffer reaction. There were 32 in 1905 and 16 in 1906. All these vibrios without exception were encountered in persons suffering from intestinal disorders, such as dysentery and enteritis, and their presence could often be recognized by the examination of a simple preparation.

In 1911 the same observer examined at Tor 1,160 pilgrims, and 31 times found cholera vibrios and 23 times nonspecific vibrios. The latter were found exclusively among individuals stricken with diarrhea or dysentery, never among choleraics. At the last session of the committee Dr. Ruffer thus summarized the impressions produced in his mind by the general results of his observations made in Egypt:

> I must admit that I have been struck since I have been at El Tor by the number of patients arriving who present vibrios, even in the years when there is no cholera. Dr. Crendiropoulo, one of my assistants, has examined from this viewpoint the stools of many persons in Egypt at times when there was no cholera, and it is astonishing to see how often he has found vibrios. It appears that there may really be some relation of cause and effect between the vibrios and diarrhea.

From the experimental point of view Metchnikoff has been able to bring about the production of a grave choleriform diarrhea, and even a true attack of cholera, developing with all the classical symptomatology (the stools becoming rice water and the vibrios abundant) by the ingestion by a man of cultures of the vibrio of Versailles. Now this vibrio isolated by Sanarelli from the water of a fountain at Versailles, where all manifestations of cholera were wanting, is not agglutinable and can not be considered either by its origin or its characteristics as belonging to the order of cholera vibrio. Its ingestion also produced fatal cholera in the young rabbit. The same observations likewise apply to the vibrio of St. Cloud, likewise isolated by Sanarelli from the water of the Seine.

If these observations tend to make one think that numerous vibrionic species are capable of producing in man, under certain conditions, diarrheas more or less severe, simulating sometimes a genuine attack of cholera, there are no observations which would justify the assertion that these diarrheas might develop into an epidemic form, suggesting cholera, in the absence of choleraic vibrios with positive reactions.

As early as 1893 Ruffer had isolated from five cases of colitis and dysentery, without symptoms or lesions of cholera, several vibrios presenting all the characteristics as then known of cholera, including the Pfeiffer phenomenon.

In 1905 F. Gottschlich, upon the outbreak of a severe epidemic of dysentery, which broke out in the camp at Tor upon the return of the Moslem pilgrimage, examined systematically the intestinal contents of 107 deceased pilgrims. In no case could the death either on clinical or anatomical grounds be attributed to cholera, yet 6 presented vibrios having all the morphologic and cultural characteristics of cholera vibrios, agglutinating in dilutions of 1–500 to 1–2,000 with a specific serum, active in dilutions of 1–3,000; and also giving the Pfeiffer reaction. These vibrios are to-day known to science as the El Tor vibrios.

Similar researches made in 1906 upon the intestinal contents of 127 pilgrims stricken with various infections enabled the same observer to isolate two vibrios, presenting like those of the previous year the characters of agglutination and bacteriolysis, and in 1907 a similar vibrio was found in a pilgrim dying of cancer of the stomach. If one is restricted to the definition which has already been given of the cholera vibrio, the El Tor vibrios would be considered as all true cholera, but neither in 1897 nor in 1905, 1906, or 1907 had any cholera been disclosed during the course of the pilgrimage, either at Hedjaz or Tor.

Whatever may be the explanation of the presence of these vibrios in the intestines of pilgrims returning from the holy places, it remains nevertheless remarkable that they had not brought about any manifestations of cholera in the eminently receptive population of Hedjaz or the camp at Tor. Hence it was indicated to determine whether bacteriology might not furnish a means of distinguishing them and of assigning them to a place in the group of agglutinable vibrios.

The problem was shown to be particularly interesting from the very beginning, for the reason that these vibrios were found in fact to present in many respects a peculiar physiognomy. The question raised by the discovery of the El Tor vibrios has thus been the origin of quite a series of researches, which, if they have not led to a definite result, have at least enriched science by very interesting results. These reactions belong to three orders of phenomena, viz, hemolysis, deviation of complement, and the secretion of soluble toxines.

Hemolysis.—In his report of the operations of the first German cholera commission, published in 1887, Gaffky mentions as one of the properties of the cholera vibrio, that of dissolving the red blood corpuscles, and the description which he gives of the phenomenon shows that the solution of the blood corpuscles is produced by the secretion of a substance diffused outside of the microbial cells, a *hemolysin*, to give it the name which it has since received. Gaffky says:

When a gelatin to which blood has been added is used as a culture medium, the cholera vibrios destroy the red corpuscles, as is to be clearly observed on plate cultures, and this well beyond the limits in which is produced the liquefaction of the gelatin. Upon the plates, colored red by the blood, the colonies of vibrios appear each to be surrounded by colorless halos, of very striking appearance. Moreover it is to be remarked that this characteristic is not peculiar to the cholera vibrio, but belongs also to other organisms.

Kraus and his pupils had already undertaken the study of hemolysis as a diagnostic point, permitting the differentiation of vibrios of various species (9).

The El Tor vibrios are hemolytic. It had been previously considered that this was an important differential characteristic, for the researches made upon a number of vibrios, choleraic and noncholeraic, had led to the belief that a strong hemolytic power was the exception for agglutinating vibrios, while it was the rule for the others. It appears, however, according to recent discoveries, that the proportion of hemolytic species among agglutinating vibrios is greater than had been previously admitted. Huntemüller found 35 species out of 55 experiments when he preserved the plates under observation for six days; he found only six when the period of observation was limited to 24 hours. At St. Petersburg it was found that out of 642 cholera vibrios, newly isolated from feces and water, 406 gave the hemolytic reaction, clearly and strongly.

The hemolytic vibrios, even when strongly hemolytic, do not always lend themselves to the extraction of soluble hemolysins, though many of them have it.

These hemolysins have the character of an antigen; that is to say, that by injecting into animals filtered cultures which contain it the production of an antihemolytic serum is brought about.

The preparation of antihemolytic serums and the reciprocal experiments of hemolysin and serum have not as yet furnished grounds of differentiation between the various vibrionic species.

So far as the experiments have gone, the serum corresponding to a hemolysin is shown to be active against others.

The hemolytic power is shown to be of different strengths among the various species which possess it. For the same species it is susceptible of greater or less variation, varying with time and the vicissitudes to which the cultures have been exposed. Despite these contingencies, which indeed are not in excess of the biologic properties of microbes in general, it is a characteristic which merits being borne in mind.

Deviation of complement.—The property possessed by cells and cellular extracts, sensitized by an immune homologous serum, of immobilizing the alexin, or as it is said of deviating the complement (reaction of Bordet-Gengou), has furnished bacteriologists with a very fruitful method of diagnosis which had not as yet been applied to the identification of cholera vibrios (10).

Crendiropoulo has tried 42 vibrios from the point of view of the agglutination reactions according to Pfeiffer and Bordet-Gengou. He has also experimented upon their hemolytic powers.

These vibrios were divided into four groups, thus constituted:

	Reaction of agglutination.	Pfeiffer reaction.	Bordet-Gengou reaction.	Hemolysis.
Group I—12 vibrios	+	+	+	−
Group II—6 vibrios	+	+	−	+
Group III—14 vibrios	−	−	+	+
Group IV—10 vibrios	−	−	−	−

Among the vibrios neither reacting as to agglutination nor giving the Pfeiffer reaction, there are quite a number which are capable, however, of deviating complement in the presence of an anticholeraic serum. In the second place, the El Tor vibrios are clearly separated from the group of other agglutinable species. This conclusion as to the El Tor vibrios has, however, been controverted. Betsche and Kohn, who have tried the reaction with various vibrios in the presence of various serums, have arrived at the following conclusions:

An El Tor vibrio IV, with El Tor serum, reaction positive.
A cholera vibrio with El Tor serum, reaction positive.
A vibrio Metchnikoff with El Tor serum, reaction negative.
An El Tor vibrio with a cholera serum, reaction positive.

The same results are obtained if in place of the vibrio El Tor IV the vibrio El Tor V is tried.

Neufeld and Haendel are of the opinion that the El Tor vibrios react as truly choleraics.

These differences are due perhaps to differences of technique, but are sufficient in any event to cause reservations as regards the El Tor vibrios. As to the fact that there are vibrios capable of deviating complement, though they react negatively to agglutination and Pfeiffer reaction, we lack facts showing the practical significance of these results; upon this point the progress of science must be awaited.

The toxin of the vibrios.—The symptomatology of cholera is of the nature of a toxic disease, and Koch had already expressed the opinion of the existence of a poison secreted by the cholera vibrio. The proof of their toxic properties, and the differentiation of the specific poison which they elaborate, would furnish certainly the basis of a classification of vibrios, at once very natural and very useful for the determination of cholerigenic species. If science has not advanced in this direction it gives nevertheless some very interesting facts.

The experiments made in order to prove the existence in a culture of the Koch vibrio of a soluble toxin analogous to the toxins of diphtheria and tetanus, capable of playing the rôle of an antigen—that is to say, the injection of which into an animal brings about the formation of a specific antitoxin—were for a long time without result. In the presence of their lack of success, Pfeiffer had advanced the hypothesis that the choleraic poison was of a different nature, and had given, in order to designate it, the term endotoxin. The existence of true soluble toxins secreted by cholera vibrios was definitely put beyond doubt in 1896 by the work of Roux, Metchnikoff, and Salimbeni. The toxin of Roux, Metchnikoff, and Salimbeni is not materially altered by a boiling temperature; it loses its activity by exposure to the air, above all by exposure to light, but keeps well in sealed tubes. It is to be remembered that the endotoxin of Pfeiffer, obtained by bacteriolysis and maceration of the microbial bodies, bears without notable diminution of strength a temperature of 60° C. for one hour.

Guinea pigs are the most sensitive animals, and with large doses death may be produced in a few minutes. "The effect is truly like that of lightning, especially if the injection is made into the abdominal cavity." The fall of temperature immediately follows the administration of the poison and continues until death. The animals vaccinated by injections of toxin or by intravenous injections of living cultures give an antitoxic serum.

Salimbeni on the one hand and Brau and Denier on the other have obtained toxins which appeared identical with each other and with the one just described, and have vaccinated animals and prepared antitoxic sera.

Kraus has shown that the filtered cultures of a certain vibrio (vibrio of Nasik) isolated in the Indies by Dr. Simon from an authentic case of cholera, but which is not to be regarded as truly choleraic, as anticholeraic serum does not agglutinate it (its homologous serum does not agglutinate cholera vibrios), contains a soluble toxin, the most striking characteristics of which are on the one hand its frailty, especially in the presence of elevated temperatures, on the other its property of killing rabbits in a few minutes by the intravenous route, and which also contains a soluble hemolysin. A short heating at 58° C. destroys both the toxin and the hemolysin. Animals immunized with it give a serum, which, mixed with the toxin in vitro, immediately neutralizes it.

Kraus and Pribram have shown that the vibrios of El Tor give a thermolabile toxin with a rapid action on rabbits, and a soluble hemolysin similar to that of the vibrio of Nasik. The serum of animals vaccinated against the El Tor vibrios neutralizes the toxin of Nasik, and reciprocally, but only the serum of El Tor is active in the presence of a vibrio of Saigon, typically choleraic and nonhemolytic, which itself gives an immune serum, inactive against the two other toxins.

Reciprocal action of serums and toxins corresponding to the vibrios of Saigon, El Tor, and Nasik, according to Kraus.

Serums.	Toxins.		
	Saigon.	El Tor.	Nasik.
Saigon	+	−	−
El Tor	+	+	+
Nasik	−	+	+

Huntemüller, in a recent work, has shown that several choleraic vibrios are capable of producing toxins and hemolysins in every respect analogous to the products of the El Tor vibrios.

The serum of animals immunized against the toxin of one of these vibrios (vibrio 70 of the Berlin collection) is at the same time antitoxic and antihemolytic. It neutralizes equally the toxin of the El Tor vibrios. Moreover, animals immunized against the El Tor toxin give a serum which netralizes the toxin of vibrio 70.

All that it appears possible to deduce at the present time from these fragmentary facts would be the the poisons secreted by various cholera vibrios belong represented on one hand by the endo-toxin of Pfeiffer, by the toxins of Roux, Metchnikoff, and Salimbeni, of Brau and Denier, or at least by the thermostable members of this group; on the other hand by the thermolabile toxins obtained from the vibrios (El Tor, vibrio 70) which all present the common characteristic of being strongly hemolytic.

The consideration of the vibrionic toxins and of their corresponding serums leads to conclusions as to the affinities which the ones exercise within the limits of the groups of the vibrios of positive reactions, but to which the others do not reach. The vibrios of El Tor answer on the one hand to certain true choleraic organisms (vib. Saigon and vib. 70); on the other hand to the group of hemolytic, but nonspecific vibrios (vib. Nasik).

From the preceding the definite conclusion may be drawn that considerations relative to the hemolytic power of vibrios, to their faculty of producing deviation of complement and of their toxins do not furnish at the present time such reactions as would permit the establishment between choleraic vibrios of differentiations of a practical character.

The fact that the bacillus carriers of the vibrios of El Tor did not plant cholera either at Hedjaz or at the lazaretto, signifies consequently that the discovery of agglutinable vibrios, hemolytic or not, and apart from all choleraic manifestations, should be interpreted with prudence, and not as constituting for the ensemble to which the carriers belong, a state of infection. This is the true meaning of the conclusions adopted by the committee as regards bacillus carriers. A very recent observation of Crendiropoulo and Madame Panayotatou lends support to this manner of thinking. These observers have isolated from the stools of a patient arriving from a Province of Egypt (where there have been no manifestations of cholera since 1902) at Alexandria, in order to receive treatment for a Bilharzian diarrhea from which he had suffered for three years, two monociliated vibrios, agglutinable in the proportion the one of 1 to 2,000, the other in 1 to 500 by a serum active in 1 to 3,000, and giving both the reaction of Pfeiffer; the reaction of Bordet-Gengou positive in one and negative in the other, and neither hemolytic. In 22 days after the examination the vibrios had disappeared from the stools.

The serum of the patient agglutinated neither cholera vibrios, nor the vibrios isolated from his stools; it was not bacteriolytic and did not give the Pfeiffer reaction. It was therefore a question simply of a healthy bacillus carrier. The point of interest in the case is that he came from a neighborhood which had not for a long time been visited by cholera; that the most minute inquiry failed to show any communication, even presumptive, between him and cholera patients or persons who might themselves have been bacillus carriers. Moreover, though suffering from diarrhea, and consequently in a specially receptive condition, in spite of the presence of vibrios in his intestine of a choleraic nature, he did not himself have cholera.

III.

The research of the agglutinating power and of specific bacteriolysins in the blood of persons suspected to have undergone an attack of cholera permits the establishment of a diagnosis, even at a period when the vibrios themselves have disappeared from the intestine. It would be sometimes possible then by this means to bring to light, up to the time of the first positive cases of an epidemic, incidents, and to thus establish the fact of unsuspected cases, establishing a relation between other patients and isolated cases.

In the researches made by Gaffky in 1905, out of 14 specimens of blood examined it was possible in 7 instances to affirm that there had been an attack of cholera, though the vibrio could not be discovered in the stools.

In 3 only of the 7 cases could indication be found as to the period of the disease at which the examinations were practiced. In an individual taken sick on August 28 five examinations made of feces from September 7 to October 8 were all negative. On September 10 his serum was agglutinating in the proportion of 1 to 500. In a second patient, taken sick on August 29 and pronounced cured on September 15, three examinations of feces, made on September 6, 15, and 23, were all negative; the serum, however, on September 21 gave the Pfeiffer reaction in 1 to 300, but only agglutinated in 1 to 50. In a third patient the first examination of the stools was only made on the day that he was pronounced cured. It was negative, as well as two others made in the space of nine days, but on the ninth day his serum gave the Pfeiffer reaction in dilution of 1 to 200, but was only agglutinable in 1 to 50.

The preceding shows that, from the point of view of the discovery of the specific antibodies, the Pfeiffer reaction is superior to that of agglutination. This, indeed, is the conclusion of Gaffky from the total of his observations. It is clearly shown in the table below, in which are found included the two results, side by side. In two other cases the positive result of the Pfeiffer reaction was obtained 23 and 24 days after the disease.

Agglutination.		Pfeiffer phenomenon.	
Dilution.	Result.	Dilution.	Result.
20	−	500	+
50	−	300	+
50	−	200	+
50	+	500	+
100	−	250	+
50	+	500	+
100	−	500	+
100	+	500	+
200	−		
100	+	....	....
200	−		
100	+	....	....
200	−		

The facts collated by Svenson also confirm these observations. This observer having investigated the agglutinating power and the power of giving the Pfeiffer reaction in the blood of 27 cholera patients whose cases had been confirmed by the finding of the vibrios in their stools, found 21 positive results in the Pfeiffer experiment, while the agglutination was positive six times only in a dilution at most of 1 to 50.

Any agglutination not produced in a dilution greater than 1 to 50 should be regarded as negative. Jansen found once an agglutination in 1 to 640.

Gaffky found in the blood of three bacillus carriers specific antibodies in high dilutions.

Van Loghen examined in 1910 the feces of 298 healthy individuals composing the crews of 14 steamers coming from Russia to Rotterdam. He found four bacillus carriers, and investigated the bactericidal action of their serum. He employed a culture one loopful of which killed a guinea pig in 24 hours. While 50 milligrams of the serum of a normal man, and sometimes 250 milligrams, did not prevent the death of the guinea pig and did not produce the Pfeiffer reaction, 5 milligrams of the serum of the bacillus carriers sufficed to save the inoculated guinea pig and to produce the Pfeiffer phenomenon.

These facts which are explained easily by admitting that in bacillus carriers considered healthy there are produced true infections too slight to be noticed, but sufficient to produce the formation of bactericidal antibodies, show that even among healthy bacillus carriers a retrospective diagnosis is not always impossible.

EXPLANATORY NOTES.

(1)

The vibrio of cholera was described by Koch as an organism 0.5 micron broad, and three to four times as long, and very motile. When examined in suspension in a liquid, or in the hanging drop, it is seen running about the field in directions practically straight, and with a very lively movement. "Principally in the neighborhood of the margins of the preparation, where the vibrios are found in large numbers, they throw themselves about here and there in a lively confused manner, producing a very characteristic impression, which reminds one of the dance of the larvæ of mosquitoes" (Gaffky.)

It is well colored by all the aniline dyes, and is not stained by Gram. The color most generally employed is the carbolized fuchsin of Ziehl, diluted ten times with water. This even permits securing a sort of differential coloration, the vibrios in general taking a less vivid color than the greater part of the microorganisms which accompany them.

The vibrio of Koch possesses a single cilia at one of its extremities. This can be easily stained by the method of Giemsa.

In preparations most of the organisms appear slightly curved in the shape of a comma. Two organisms placed end to end may give, according to their individual shape, the appearance of a half circle, or of a letter S.

According to Gaffky: "In cultures it is not rare to find more than two bacilli placed end to end. In colored preparations they appear as undulating, more or less long, filaments; when examined in the living state it is easily demonstrated that they form beautiful spirals, having a very great resemblance to the spirochæte of relapsing fever."

It may thus be deduced that isolated vibrios represent fragments of a spiral, and that the more or less curved forms are the various aspects of their projection upon the plane of the slide.

Most frequently the vibrios which are met in cases of cholera show themselves under forms which, while not always those of typical vibrios, still answer closely to the preceding description, sometimes corresponding exactly, sometimes differing only in the breadth and length of their respective organisms, their degree of curvature, and the liveliness of their motion. But sometimes they differ completely, and constitute long, straight rods, or ovoid or round organisms of coccoid form. Motility, even, is not a constant characteristic, and may be completely wanting.

External morphological characteristics are also far from being immutable for each species, and the vibrios preserved in laboratories, and especially when they have been only recently introduced there, have a marked tendency to undergo morphological modifications, according to the influences to which they are subjected, such as the nature of the culture media, passage through animals, etc.

(2)

Dunbar reports the following experiment made in Hamburg in 1893. Preparations of fecal matter originating, some from individuals in whom, from the aggregate of clinical and bacteriological signs the diagnosis of cholera had been made, and some from others in whom it had been impossible to make a diagnosis, were mixed together, and submitted to the examination of two different bacteriologists. Out of 142 cholera preparations, one recognized 70, the other 59.

For the first, the detail of results, taken in connection with the clinical features of the case from which the preparations originated, were as follows:

Clinical diagnosis.	Microscopic diagnosis.	
	Positive.	Negative.
Cholera	41	27
Gastro-enteritis	25	22
Without symptoms of illness	4	23

(3)

The vibrio of Koch grows well upon all the media in current use in laboratories. It is essentially arobic. In liquid media it develops quickly and especially in the superficial layers, where it forms, conditions being favorable, thick and wrinkled veils or layers.

It does not grow in media even slightly acid, preferring a frankly alkaline reaction, and can support doses of alkali which arrest growth of a number of microbes with which it is found most frequently mixed in fecal matters, notably the *B. coli*. It is largely upon this last property that is based the composition of the elective media, of which subsequent mention will be made.

The proportion of alkali which affords the optimum of culture differs in various species. According to Dullman it is comprised in general terms between the extreme limits indicated in the table below, the figures representing the number of cubic centimeters of normal alkaline solution which must be added to 100 cubic centimeters of bouillon, assumed to be neutral to litmus.

	Solution of caustic soda.	Solution of sodium bicarbonate.
Vibrio of eastern Prussia	1.95	1.70
Vibrio of Witze	.78	.68

The dosage of alkali which it is necessary to employ to obtain media clearly differential for the cholera vibrio and the bacteria of feces (colon, typhoid, paratyphoid, dysentery) are much higher in the one case than in the other.

By reason of the formation of alkaline albuminates, in order to obtain equivalent results, doses of alkali are required, large in proportion as the media are rich in albumen, and after alkalinization the media must be more strongly heated.

In dilute peptone solution (1 to 100) at 37° C. the cholera vibrio develops rapidly, and even at the expiration of six hours gives an abundant culture. The greater part of the bacteria which ordinarily accompany it grow less quickly. With a bouillon of meat alone the results are less to the advantage of the vibrio.

Dunbar first conceived the idea of resorting systematically to preliminary cultures in peptone water for the search of the vibrio in pathological feces. These were planted in the average proportion of 0.1 cubic centimeter in 10 cubic centimeters of media. "Frequently, at the end of six hours a pure culture of vibrios might be collected from the surface and the immediate vicinity. In every case the culture even when mixed with other bacteria is found to be much enriched in vibrios, so that subsequent searches for the latter are found to be greatly facilitated. Experiments have shown that often in cases where isolations have been attempted on plates, starting with the original material and have failed, those starting with peptone water cultures have succeeded.

"The best time to utilize the cultures in peptone water is six hours after planting; sometimes it is necessary to wait longer. In every case it is necessary to practice plants from time to time, in order to be able to grasp the moment when the vibrios predominate. Later the bacteria of feces also invade the culture to an extent not permitting the isolation of the vibrio in new plantings." (R. Koch.)

When one is dealing with materials containing very few vibrios, as is usually the case in those coming from bacillus carriers, it may sometimes be of value to make the first planting from the peptone water culture at the end of 3 hours in the incubator.

Sometimes the cultures made from the peptone water not having given results up to 12 hours, these may be obtained from later ones, up to 24 hours, but there appears no reason ever to pass this limit. Some bacteriologists prefer, in place of making successive plants from the same culture, to make a series of plants in peptone water, planting, for example, every 4 hours a new tube, with a sowing taken from the superficial layer of the preceding tube.

The German instructions of March 21, 1907, give the following formula for the preparation of the peptone water:

Dry Witte's peptone	grams..	100
Common salt	do....	100
Nitrate potassa	do....	1
Crystallized sodium carbonate	do....	1
Distilled water to make	liter..	1

This gives a mother solution, which for use is to be diluted with nine times its volume of water.

Metchnikoff has recommended a medium which contains, in addition to peptone and salt, a small quantity of gelatin. The formula is—

Dry peptone	grams..	1
Common salt	do....	0.5
Gelatin	do....	2
Distilled water	do....	100.

made slightly alkaline with solution of soda.

Solutions of commercial peptones may with advantage be replaced by peptones prepared in the laboratory, as, for example, those prepared by the digestion of pigs' stomachs in a solution of HCl, 5 per 1,000.

When the vibrio is being sought in water, use is generally made of quantities of 100 to 1,000 c. c. In every case the water to be examined is collected in a sterile flask, and to it is added one-tenth of its volume of the ten times concentrated solution of peptone and salt, like the solutions of peptones employed for preliminary cultures. These are put in the incubator, and the steps are similar to those for ordinary plantings in peptone solution. If it should be desired to operate upon larger quantities of water, they are filtered through a bougie of porcelain, or better, through a bougie covered externally with a pellicle of collodion. The residue remaining upon the bougie is finally brushed off, diluted in a small quantity of sterile water, and the experiments are made with this mixture.

(4)

After 24 hours at 22° C. in the incubator the colonies already appear under the form of small, opalescent disks, with a slightly granular surface and wavy outlines. In one day more the disk has become thickened and extended; it is clear, and its granular and brilliant surface presents the appearance of a mass of small glass pearls; its borders are like lacework. Later it is surrounded by a zone of liquefaction; it forms a capsule full of a transparent liquid, at the bottom of which rests the colony. The liquefaction progresses slowly; it spreads for 5 or 6 days to the entire plate, which gives out a peculiar odor, compared to that of the "urine of mice."

Upon plates planted with pure cultures of cholera vibrios there are often found alongside of typical colonies answering to this description other colonies, cloudy, with irregular outlines, more or less active liquefaction, and having nothing characteristic in their appearance. When the plantings are made, starting with choleraic fecal matter (or from cultures in peptone water), the typical and atypical colonies may exist alongside of each other. Often the first predominate, but sometimes also they are entirely absent.

Finally, there exist, principally in waters, numerous vibrionic species which give on gelatin, colonies absolutely similar to typical choleraic colonies. These species are found, though generally rarely it is true, in human feces, in particular among persons who have partaken of waters in which they abound.

By reason of these peculiarities, the deductions which can be drawn from the appearance of colonies upon gelatin plates are somewhat misleading.

The same may be said of stab cultures in gelatin.

(5)

The medium of Dieudonné is prepared as follows: Equal parts of a normal solution of potassa and defribinated ox blood are mixed and sterilized in the autoclave (sol. A); there is also prepared according to the ordinary technique a nutrient agar, exactly neutral to litmus (sol. B). Seven parts of B are mixed with three parts of A and poured upon plates.

When the mixture of blood and alkali is heated a part of the latter is found to be saturated by the albuminoids or the products of their hydrolysis, but the final agar still preserves a very strong alkalinity, corresponding to about 0.6 per cent of potassa.

The free alkali and the alkaline combinations formed during the heating of the blood give together to the medium some special qualities. This does not happen with the nutrient agar prepared according to the ordinary technique and alkalinized to the same degree nor according to Huntemüller with an alkaline agar to which is added at one period the defribinated blood, prepared aseptically. They disappear also if, following the method of Dieudonné, a smaller quantity of potassa is put into a mixture of equal parts of blood and water.

The plates ought not to be used immediately after their preparation. Dieudonné recommends to keep them several days in the incubator at 37° C., uncovered and face down, or to heat them for five minutes at 65° C. An equally good result is obtained by keeping them for 48 hours at laboratory temperature. During this time the surface of the agar becomes slightly dry and loses a part of its alkalinity by the evaporation of the ammonia, formed in quite a large quantity by the heating of the alkaline blood. This is without doubt the reason of the advantage which this kind of maturation of the agar blood presents, which, above all, should not be pushed too far. Once in condition (by keeping for 48 hours at ordinary temperature, for example) the plates ought to be used within a period not exceeding five or six days.

The necessity of preparing plates quite a long time in advance or of heating them to 65° C. may in certain cases be annoying. Neufeld and Woithe claim that they obtain a medium, capable of immediate use (but not preserving its elective qualities for more than 24 to 48 hours), by adding to each 10 cubic centimeters of agar blood, 0.2 cubic centimeters of a 10 per cent solution of lactic acid.

Upon the agar of Dieudonné, planted in streaks, the cholera vibrios grew abundantly. On the contrary, the organisms which most often accompany them on plate cultures, and in the first place the *B. coli*, grow either very badly or not at all. The medium possesses in these two respects a very extremely marked power of election.

The typhoid bacillus, the paratyphoid bacilli, and the bacillus of dysentery deport themselves in general like the *B. coli*. On the contrary, the noncholeraic vibrios of water and of feces, the *B. proteus*, the *B. pyocyaneus*, and several other organisms behave very nearly like the cholera vibrio.

The *B. proteus*, which is encountered quite frequently in diarrheal stools, and the *B. pyocyaneus*, also very frequent in the diarrheas of hot countries, are known to complicate the search for cholera vibrios. In this respect the difficulty is not obviated.

The cholera colonies, developing upon the medium of Dieudonné in spite of their transparency, their grayish tint, and their glistening appearance by reflected light, are in fine only a little characteristic. When they are found mixed with a great number of others their search remains difficult and may present deceptive points. For this reason the employment of hyperalkaline blood agar, extremely valuable for bacteriological examinations to be essayed upon fecal matter, is much less so when it comes to hunting for cholera vibrios in the midst of the bacterial flora of waters.

The culture of the vibrios upon the medium of Dieudonné causes no sensible modification of the cultural or biological characteristics. Liquid media prepared by mixing in the proportion of 3 to 7, or of equal parts, of alkaline blood and neutral peptone water, present no special advantage for the culture of vibrios. Such media, which it has been tried to use for enrichment cultures, do no better than ordinary peptone salt solutions.

(6)

These are the directions given by Crendiropoulo and Madame Panayotatou: The medium is composed of peptone alone, but all of the commercial preparations do not appear equally adapted to its preparation. Among the products of the various manufacturers which have been tried, the peptones of Witte and Chapoteau alone have given satisfactory results. The method of preparation is as follows: Five grams of peptone are dissolved in 190 cubic centimeters of water; 10 cubic centimeters of a 10 per cent solution of caustic soda is added, and the mixture is heated for three to five minutes; after cooling it is filtered through paper and heated to 100° C. for a half hour. When the peptone of Witte is used it is preferable to diminish the dose of soda, and to add only 8 cubic centimeters in place of the 10 cubic centimeters of the 10 per cent solution. It is very important not to depart from these proportions, because the combination of the soda with the peptone ought to be such that the liquid is left after sterilization of a degree of alkalinity comprised between 0.28 and 0.40 per 100, calculated as soda. At the moment of using, 4 parts of the alkaline peptone are mixed with 6 parts of neutral agar (agar 3 grams, peptone 1 gram, sodium chloride 0.5 gram, water 100 grams) and it is poured on to plates. The mixture should be made aseptically, because a further sterilization produces hydrolysis of the agar, which becomes brown and less fit for use. For planting, a certain small quantity of the material to be examined is diluted in a little normal salt solution, or preferably in peptone water; from this dilution 4 to 5 loops are touched to various parts of the plate and spread by means of a little glass rod.

In preliminary experiments made by planting simultaneously the cholera vibrio and the *B. pyocyaneus*, colonies of the vibrio alone were encountered at the end of 24 hours, to the exclusion of all others, while control cultures upon ordinary agar showed pyocyaneus almost exclusively, and very rarely a few accompanying vibrios. Experiments made with stools artificially infected, and with cholera stools, gave similar results.

(7)

Cultivated in peptone solutions (petone 1 per cent, NaCl 0.5 per cent) containing a small quantity of nitrates, the vibrio of Koch gives, at the expense of the former, some indol, and by reduction of the second, nitrites. The simultaneous presence of these two transformation products is shown by the red color which the liquid takes upon the addition of a few drops of a mineral acid, sulphuric acid free from nitrous products, for example. In the absence of nitrates in the medium, indol alone would be found in the culture, and might be put in evidence by the addition, after the mineral acid, of a few drops of a 0.5 per cent solution of sodium nitrite. All commercial peptones do not lend themselves equally to securing this reaction, but good results can be surely obtained by employing 1 per cent solutions of pepsic peptones, prepared in the laboratory by the digestion of pigs' stomachs in hydrochloric solutions, neutralized, and with the addition of 1 per 1,000 of nitrate of soda.

The experiment is only conclusive when carried out on a pure culture, and it is best not to make it until after 12 hours' stay in the incubator.

(8)

Agglutination reaction.—The agglutinative power of a serum, the titre of dilution (made in physiologic salt solution) is that dilution in which 1 c. c. agglutinates completely (the flakes deposited at the bottom of the test tube, leaving a clear liquid above) a definite quantity of culture (1 oese), under definite conditions (temperature 37° C.), in a given time (2 hours).

The normal serum of animals possesses the power in the presence of microbes in general, and of vibrios in particular, of agglutination, sometimes in a very marked degree. The existence of this common property might be a source of error, but it is avoided by using only immune serums, the specific activity of which is quite elevated. It is therefore indicated to resort to the immune sera obtained from animals in which this agglutinating power is least marked, when this course in practicable.

The order of preference of animals for the preparation of immune sera is, the rabbit, the ass, the goat, and the horse. For laboratory experiments which require the procuring of a serum corresponding to a given microbe, the rabbit remains the animal of election. When it is a question of securing large quantities of serum, practical considerations lead to the choice of the horse, and it is with horse serum that the work of laboratories is generally done.

The best method of procuring immunization is to inject by the intravenous route cultures killed by heating for one hour at 60° C. With rabbits three injections (1 oese, 3 oese, 5 oese), at intervals of 7 days, generally suffice to obtain by a bleeding made 7 days after the last injection a serum of very strong agglutinating power. (Kolle and Gotschlich.)

The agglutinating power of serums preserved in a liquid state may vary within very large limits. It remains more constant when the sera are dried in vacuo, and kept in sealed tubes, protected from the influence of light.

For the identification of vibrios it is well to employ only a cholera serum the agglutinating titre of which is 1–4000, or even higher.

Experiments are made (1) with a preliminary dilution in order to have a positive indication as to the character of colonies upon solid media, which it is desired to plant in order to secure pure cultures; (2) a definite, precise dilution, in order to determine the exact value of the activity of a cholera serum in the presence of the given vibrio which it is desired to identify.

Preliminary experiment.—In order to secure a clear result in a short time it is convenient to employ quite strong doses of the serum. With a serum the activity of which is 1-5000 for example, the dilutions would be 1-500. The operation might be performed by distributing in the diluted serum a small quantity of culture taken from the suspected colony. In a few minutes, 30 or more, the drop should appear as if composed of a clear liquid in which the agglutinated microbes form a network, similar to the meshes of a fishnet. A control drop of physiologic salt solution, containing as nearly as possible the same quantity of culture, should preserve its uniformly cloudy aspect. This control is absolutely necessary for numerous microbial species, above all in very young colonies, spread very badly, and might produce appearances simulating an agglutination.

The phenomenon can be observed without difficulty with the naked eye, but can also be followed under the microscope, between slide and cover slip, under a low magnification.

If the agglutination shows itself under the conditions indicated, the colony is probably choleraic; if not, the experiment is to be regarded as inconclusive.

Determination of agglutinating power.—A series of dilutions of the immune serum in physiologic salt solution is prepared in the proportions of 1-200, 1-500, 1-1000, etc., and the liquid is filtered, if need be, to secure an absolutely clear liquid. Then 1 c. c. of the dilutions is put into small test tubes, and in each of them there is rubbed up, with careful shaking to obtain a uniform cloudiness, one loopful of a culture upon agar, 18 hours old, of the culture to be tested. These dilutions are put in the incubator at 37° C., and observed at the end of two hours. Every dilution is considered to have given a positive reaction, in which the vibrios are collected in flakes and deposited at the bottom of the tube, leaving a clear liquid above.

There should be made at the same time and under the same conditions two control observations—one with the culture to be identified, and the normal serum of an animal which has been used to furnish the immune serum, and another with the immune serum and an authentic cholera vibrio.

When it is desired to experiment with very young cultures (a few hours old only) there is sometimes produced even in physiologic salt solution without the addition of any serum, a pseudoagglutination. This inconvenience can be avoided by using only cultures which have been at least 15 hours in the incubator. If it is desired to use younger cultures, this incident should be provided against by a previous control experiment.

To be perfectly sure, the agglutination experiments should be made only upon pure cultures. When operating upon impure cultures of cholera vibrios, there may result no perceptible phenomenon, even under the microscope.

Experiments with the feces directly.—Dunbar has proposed, with a view to obtaining a rapid preliminary result, to make the agglutination experiments upon the suspected feces themselves. Upon two cover slips are deposited two drops, one of cholera serum in the dilution of 1-500; upon the other a drop of normal serum of the same species of animal, diluted 1-50; then in each of the drops is suspended a small quantity of the suspected material, and the cover slips are then inverted upon slides for microscopic examination.

When the material examined represents, as often happens, a pure or almost pure culture of cholera vibrios, on examining the two drops comparatively, it is seen that in the drop representing the normal serum there is a very abundant, actively motile flora, while in the other they are immobolized. The operation is rapidly done, not requiring in general more than 5 minutes, and the comparative aspect of the two drops is sometimes very characteristic. By prolonging the examination there may be observed in the immune serum drop a genuine agglutination. It is well to know that sometimes, even in the normal serum, the vibrios present a temporary immobilization. When the experiment is made upon material where vibrios are found mixed with an abundant and varied microbial flora, it becomes difficult, if not impossible, to count upon results of any value.

Culture in the presence of agglutinating serum.—Bandi has described as a rapid method of diagnosis the following procedure: A culture medium is made with a peptone and salt solution of 1 per cent to which is added anticholeraic serum in a proportion corresponding to about one-half of its agglutinating power. This medium is distributed in quantities of about 5 c. c. in small tubes, terminating at the base in a drawn-out point. They are planted on the surface with the material to be examined by means of a platinum loop, and put in the incubator at 37° C. If a culture, pure or nearly so, of cholera vibrios is under examination, these multiply and form flakes, which little by little accumulate in the drawn-out end. In a short time, say 2 to 7 hours, a very characteristic agglutinated culture may be thus secured. When dealing with material containing a complex flora, the method may be practiced with the same observation as to reliability as the one above.

REACTION OF PFEIFFER.—The reaction of Pfeiffer may be tried in two ways, *in vivo* according to the method of Pfeiffer or *in vitro* according to the method of Bordet

The bacteriolytic power of a serum is defined as that dilution, made in meat bouillon of which 1 c. c., to which is added one loop of an 18-hour old culture on agar, virulent and kept for 18 hours in the incubator at 37° C., injected into the peritoneum of a guinea pig, brings about in one hour, after a transformation, the dissolution of nearly all the vibrios.

Pfeiffer's method.—It is preferable to employ as immune serum that of the rabbit for the normal serum of other species of laboratory animals (the horse, the ass, the goat) is generally more rich in bacteriolytic substances, which, having no specificity, might be a source of error. To eliminate moreover as much as possible this latter chance it is best to use only serums having a high bacteriolytic power, 1—5000 at least.

According to Kolle and Gotschlich such serums are easily obtained by injecting at once into the peritoneal cavity of a rabbit an entire culture upon an agar tube killed by a heating for 1 hour at a temperature of 56° C. The blood is to be collected 14 days after, a rabbit giving on an average 40 c. c. of serum. The experiments ought to be made on young guinea pigs weighing about 200 grams. In 1 c. c. of a maceration of meat one loopful of the culture to be tried is diluted, the culture being virulent, and 18 hours old, cultivated upon agar in the incubator at 37° C. There is then added a quantity of anticholeraic serum representing 5 times the dose of the limit of agglutinating power (that is to say 1 milligram of serum active at 1—5000, and this is injected into the peritoneal cavity of a guinea pig (A).

The injection is made after incision of the skin by means of a needle with a blunted point, which easily penetrates the abdominal walls, and which may be plunged without danger into the peritoneum. The removal of fluid from the peritoneum, with a view to examination, is made at the same point by means of a drawn-out glass pipette.

At the same time as the first guinea pig a second guinea pig is inoculated under the same conditions (B) with a loopful of the same culture diluted in 1 c. c. of maceration of meat, but without serum, and a third guinea pig (C) with a similar dilution to which is added a quantity of normal serum equal to 10 times the quantity of anticholeraic serum given to guinea pig (A).

The extractions of peritoneal fluid ought to be made at the end of 20 minutes and 1 hour, and these fluids should be examined in hanging drop, with a strong magnification.

The reaction is positive if at the end of 20 minutes, or of 1 hour at the most, it is observed that in the peritoneum of guinea pig (A) the vibrios are dissolved, and have undergone the transformation into typical granules, while in the peritoneum of guinea pigs B and C the vibrios are found in great number, motile, and their forms well preserved.

In order that the experiment may be profitably made with a given vibrio, it is indispensable that it should be virulent by intraperitoneal injection for a guinea pig, otherwise the transformation into granules and the dissolution are produced equally in the control B, and the experiment is deprived of all significance.

To determine old cases of cholera, the Pfeiffer experiment ought to be made in the following manner, in accordance with the terms of the German instructions of March 22, 1907:

"Dilutions of the serum of the suspected person are prepared in meat maceration in the proportions of 1–20, 1–100, and 1–500, and with 1 c. c. of each of them is mixed a loopful of virulent 18-hour-old cultures, and the mixtures are injected into the peritoneal cavities of guinea pigs of about 200 grams weight. A control animal receives in the peritoneal cavity a loopful of the same culture, diluted in the same way in a centimeter cube of meat maceration, but without serum. If the reaction is positive at the end of 20 to 60 minutes, it must be admitted that the person supplying the serum has undergone an attack of cholora."

Method of Bordet.—The execution of the Pfeiffer reaction requires special conditions, notably as regards animals, which are not always to be met with, especially in laboratories of exigency, established to meet the demands of epidemics of cholera. Moreover the vibrios isolated in suspected cases, all or at least most of them present the degree of virulence necessary. For this reason a resort to the technique of Bordet appears to be quite frequently indicated. It is applied in the following manner:

A series of dilutions of the serum is prepared, commencing with a mother dilution of 1 to 50. Then there is poured into a series of tubes 5 drops of the guinea-pig serum (alexine), 5 drops of a microbial emulsion, made in the proportion of one loopful of an 18-hour-old culture on agar in 1 c. c. of physiological salt solution, and the number of drops of the mother liquid necessary to obtain the desired dilution, and enough of physiological salt solution to make 20 drops. A series of controls is made with the same quantities of microbes, alexine, and normal serum in place of immune serum. Crendiropoulo and A. Panayotatou recommend further, in order to avoid any doubt in the interpretation of results, the following series of control experiments, made by always putting in the same total quantity of fluid the same quantities of microbes and—

(1) In a tube the greatest quantity of the specific serum employed, without alexin.
(2) In a tube the greatest quantity of normal serum employed, without alexin.
(3) In a tube the quantity of alexin employed, without serum of any kind.
(4) In a tube physiologic salt solution alone.

The dilutions of serum ordinarily employed are 1–100, 1–500, and 1–1000. They are all put into the incubator at 37° C. and examined in hanging drop after 3 to 4 hours.

After 18 hours in all cases, where cholera microbes are being dealt with, it is seen in all the control mixtures without exception that the vibrios exist in abundance and living, while in the tubes of specific serum all more or less present only vibrios which have very completely undergone transformation.

(9)

Practically the investigation of the hemolytic power of vibrios is made on solid media, according to the method of Kraus and in liquid media, the culture and the blood corpuscles being diluted in physiologic salt solution.

Method on solid media.—Tubes of agar-agar are liquefied, and their temperature allowed to fall to 40° C. There is then added 0.3 to 0.5 cubic centimeter of defibrinated sheep's or goat's blood. A mixture is affected, and poured on to plates, which are then inoculated on the surface with the vibrio under investigation. After 24 hours in the incubator, if the vibrio is hemolytic, colonies are seen surrounded by an aureole, more or less extended, contrasting with the dark, opaque color of the rest of the plate.

Kraus recommends to limit one's self to the results obtained in 24 hours. Other observers prolong the experiment further, and consider the trial positive only at the end of two, four, or even six days. The results are very different, according to the method adopted. With the second method many more hemolytic species are found than with the first. But it is to be feared that when the plates remain several days in the incubator, the alkalinization of the medium by the ammonia produced in the culture, may have the effect of itself producing hemolysis.

Method in liquid media.—An 18-hour-old culture on agar is diluted with 4 to 5 cubic centimeters of normal salt solution; one-tenth cubic centimeter of this emulsion is added to a large drop of washed red corpuscles or simply a drop of defibrinated blood. The blood of the rabbit, the ox, the sheep, or the guinea pig is indifferently used.

The reaction may be carried on at the temperature of the room or in the incubator, but the results are not always the same in the two cases. When the experiment is made at room temperature, as a general rule the hemolysis is manifest in 12 to 18 hours. Sometimes it is delayed and appears more slowly; but there is no advantage in prolonging the observation beyond 48 hours.

(10)

The serum of an animal suitably immunized against a microbe exercises upon this microbe a bacteriolytic power. In the same way the serum of an animal into which have been injected red blood corpuscles taken from a different species acquires the power of producing a dissolution of these corpuscles. The bacteriolytic, as well as the hemolytic action of these two substances, one of which, the alexin or complement (which is completely destroyed by a heating of 56° C. for one-half hour), is common to all serums, while the other, the sensitizer or antibody (which is not destroyed by a temperature of 56° C. for a half hour) is specific and only appears in a serum as the result of appropriate treatment by the microbes or the red cells.

Microbes or blood cells suspended in liquid which contains their specific antibody, fix it, and remove it from the liquid. Thus sensitized, they have acquired the power of being acted upon by the alexin. This action of the former is shown in the case of the red cells by their solution and the setting free of their hematin, which colors the liquid red, thus rendering the observation of the phenomenon easy.

When a suitable quantity of sensitized microbes are diluted in a solution of alexin, the active substance is fixed by them, and the addition of sensitized blood cells gives rise to no hemolysis. It may, therefore, be tested whether a given vibrio presents the properties of an antigen in the presence of the antibody contained in a cholera serum prepared by starting with a cholera vibrio. It is sufficient to try if this vibrio treated by a serum (previously heated for a half hour to 56° C. in order to destroy the alexin) is capable of fixing the alexin—that is to say, of preventing the hæmolysis of sensibilized red cells. The reaction may be tried according to the original method of Bordet. Serums without alexins are prepared by heating them for a half hour at 56° C.; on the one hand, an immune serum; on the other, fresh, normal serum of the same species; for example, the serum of the horse or the rabbit. It is well to employ an immune serum of high titre, say, 1-4,000 or more. There is employed as alexin, fresh serum of the rabbit or guinea pig; as the microbial emulsion, that obtained by diluting an entire agar culture, 18 hours old, in 2 c. c. of physiologic salt solution; as the hemolytic medium, a mixture of one volume of the red cells of the sheep (washed) and two volumes of rabbit antisheep serum (the serum of a rabbit treated by injections into the peritoneum of the defribrinated blood or red corpuscles of a sheep) heated for one-half hour at 56° C. Each test consists in making use of the following mixtures:

	Tubes.		
	I	II	III
Microbial emulsion	0.2	0.2	0.2
Heated serum:			
Immune	.6	.2	.6
Normal	.6	.6	.6
Alexin	.1	.1	.1

These are kept for four to five hours at laboratory temperature, shaking from time to time, then there is added to Tubes I and II, one drop of the dilution of red cells in heated specific serum; Tube III, one drop of the dilution of red cells in physiologic salt solution.

The tubes are examined after three hours' stay at ordinary temperatures. If there is a deviation of complement, there is observed in Tube I, no hemolysis; Tube II, hemolysis; Tube III, no hemolysis.

When the microbe submitted to experiment is in itself hemolytic, the hemolysis appears in Tubes I and II, but more slowly, in 12 to 18 hours, so that it does not interfere with the execution of the experiment. The statements given relative to the quantity of alexin, of serum, etc., to be used should only be taken as a general indication. All fresh serums have not the same richness in alexin; nor all agar cultures the same richness in vibrios, so that in order that the fixation of the alexin may be complete, it is necessary that there should be a certain relation between the quantity of the former and the quantity of sensitized cells. Such an experiment, made with a certain quantity of alexin, might lead to the consideration as hemolytic any vibrio giving a positive reaction, while another made with a stronger dose might lead to a contrary conclusion. Neither is the richness of the hemolytic serum in antibody to be neglected.

In order to avoid as much as possible the sources of error, it would be well to determine the quantities of the various elements which give a clear phenomenon, by making a preliminary experiment with a cholera vibrio, and then to proceed to comparisons. In any event it is well to only consider as comparable such experiments as are made under rigorously identical conditions. Besche and Kohn recommend the employment for fixing the alexin, not the microbial body, but an extract prepared by commencing with a culture of vibrios in a Kolle flask, grown for 18 hours and emulsified in 15 c. c. of distilled water, heated for an hour to 60° C., shaking for a day at room temperature, and then centrifuging. In current practice, in order to obtain a result in three to four hours it may be sufficient to use in place of a microbial extract, an emulsion of one loopful of an agar culture in 2 c. c. of physiologic salt solution, heated for one hour at 60° C.

UNITED STATES.

REPORTS TO THE SURGEON GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

CEREBROSPINAL MENINGITIS IN TEXAS.

Surg. Guiteras at Galveston reports 9 cases of cerebrospinal meningitis with 4 deaths at Galveston from March 1 to 4, inclusive

The health officer at Dallas, Tex., reported cerebrospinal meningitis present in Dallas as follows: 1911.—Month of October, 1 case; month of November, 9 cases with 6 deaths; month of December, 73 cases with 32 deaths. 1912.—Month of January, 221 cases with 85 deaths; month of February, 106 cases with 50 deaths.

At Fort Worth the health officer reports the occurrence of 75 cases with 32 deaths during the month of February, 1912.

At San Antonio the health officer reports 12 cases with 4 deaths for the month of February, 1912.

TYPHOID FEVER EPIDEMIC AT ROCKFORD, ILL.

The health officer reports typhoid fever present in epidemic form at Rockford, Ill., with 119 cases reported during the week ended February 17, and 170 cases during the week ended February 24.

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 180 acres of land in Alameda County were covered with poison during the week ended February 24, 1912.

During the same period 3,220 acres of land in San Joaquin County and 3,400 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Feb. 24, 1912	5	[1] 148	85	
Oakland	do	13	[2] 563	382	
San Francisco	do	8	[3] 1,309	998	
County—					
San Joaquin	do		[4] 166	166	
Washington:					
City—					
Seattle	do		967	917	

[1] Identified: Mus norvegicus, 95; mus musculus, 53.

[2] Identified: Mus norvegicus, 455; mus musculus, 105; mus rattus, 2; mus alexandrinus, 1.

[3] Identified: Mus norvegicus, 658; mus musculus, 323; mus rattus, 160; mus alexandrinus, 168.

[4] Identified: Mus norvegicus, 157; mus musculus, 3; mus rattus, 4; mus alexandrinus, 2.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

SMALLPOX IN THE UNITED STATES—Continued.

REPORTS RECEIVED DURING WEEK ENDED MAR. 15, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Mobile	Jan. 1-Mar. 2	157		Year 1911; cases, 312.
Arizona	Dec. 1-31			No case.
California:				
Counties—				
Contra Costa	Jan. 1-31	2		
Fresno	do	53		
Los Angeles	do	29	1	
Riverside	do	18		
San Bernardino	do	34		
San Diego	do	2		
Stanislaus	do	1		
Total for State		139	1	
Colorado:				
Counties—				
Archuleta	Feb. 1-29	2		
Denver	do	1		
Larimer	do	1		
Mesa	do	2		
Montrose	do	6		
Rio Grande	do	6		
Total for State		18		
Connecticut:				
County—				
Windham	Feb. 1-29	1		
Iowa:				
Counties—				
Carroll	Feb. 1-29	1		
Floyd	do	1		
Harrison	do	1		
Ida	do	1		
Linn	do	2		
Louisa	do	1		
Marshall	do	1		
Pottawattamie	do	3		
Sac	do	6		
Scott	do	11		
Sioux	do	5		
Washington	do	1		
Woodbury	do	3		
Total for State		37		
Kansas:				
Counties—				
Coffey	Jan. 1-31	4		
Crawford	do	2		
Leavenworth	do	5		
Lyon	do	1		
Osborne	do	7		
Riley	do	2		
Shawnee	do	1	1	
Woodson	do	23		
Wyandotte	do	4		
Total for State		49	1	
Massachusetts:				
Counties—				
Bristol	Feb. 1-29	9		
Middlesex	do	4		
Suffolk	do	1		
Total for State		14		
Missouri:				
St. Louis	Feb. 26-Mar. 2	5		
Nebraska:				
Omaha	do	1		
New Jersey:				
County—				
Essex	Feb. 1-29	1		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended Mar. 15, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
North Carolina:				
Counties—				
Beaufort	Feb. 1-29	2		
Bertie	do	2		
Buncombe	do	2		
Columbus	do	2		
Cumberland	do	28		
Forsyth	do	1		
Gaston	do	5		
Granville	do	7		
Harnett	do	1		
Haywood	do	57		
Iredell	do	10		
Jackson	do	20		
Johnston	do	1		
Macon	do	1		
Madison	do	14		
Mecklenburg	do	3		
New Hanover	do	3		
Orange	do	5		
Pender	do	3		
Sampson	do	6		
Scotland	do	2		
Swain	do	20		
Union	do	70		
Yancey	do	3		
Total for State		268		
Ohio:				
Counties—				
Athens	Feb. 1-29	3		
Defiance	do	1		
Hamilton	do	8		
Lucas	do	9		
Montgomery	do	6		
Tuscarawas	do	1		
Total for State		28		
Pennsylvania	Dec. 1-31		1	
	Jan. 1-31	15		
Total for State		15	1	
Tennessee:				
County—				
Shelby	Feb. 1-29	6		
Wisconsin:				
Counties—				
Adams	do	6		
Brown	do	4		
Dane	do	1		
Douglas	do	4		
Dunn	do	1		
Eau Claire	do	3		
Fond du Lac	do	2		
Grant	do	1		
Green	do	1		
Green Lake	do	3		
Jackson	do	8		
La Crosse	do	2		
Marathon	do	1		
Monroe	do	1		
Pierce	do	1		
Portage	do	25		
St. Croix	do	5		
Trempealeau	do	4		
Waupaca	do	2		
Waushara	do	7		
Wood	do	12		
Total for State		94		
Wyoming:				
Counties—				
Albany	Jan. 1-31	4		
Larimer	do	3		
Sweetwater	do	11		
Uinta	do	55		
Total for State		73		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended Mar. 15, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Wyoming—Continued.				
Counties—Continued.				
Albany	Feb. 1-29	2		
Carbon	do	3		
Fremont	do	8	1	
Laramie	do	3		
Sweetwater	do	6		
Uinta	do	15		
Total for State		37	1	
Grand total for the United States.		943	4	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED FEB. 24, 1912.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	219	12	2	11	....	17	1	....	....	37	38	6	2
Boston, Mass	670,585	255	43	1	147	1	24	4	....	....	66	25	3	1
Chicago, Ill	2,185,283	749	100	10	98	2	190	12	....	....	220	27	18	1
Cleveland, Ohio	560,663	166	24	3	43	1	42	1	....	....	25	12	2	....
New York, N. Y	4,766,883	1,635	338	25	1,289	18	387	18	....	....	479	220	26	8
Philadelphia, Pa	1,549,008	546	73	7	11	....	55	1	....	....	70	54	24	5
Pittsburgh, Pa	533,905	187	19	4	11	1	17	....	1	....	....	....	....	....
St. Louis, Mo	687,029	238	20	3	18	....	29	4	1	....	48	22	3	....
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	89	23	1	40	....	26	....	....	....	21	9	....	
Cincinnati, Ohio	364,463	185	6	....	6	....	26	3	1	....	47	30	1	
Detroit, Mich	465,766	167	18	....	....	....	27	....	....	....	....	....	....	....
Los Angeles, Cal	319,198	113	18	....	4	....	17	....	2	....	13	20	3	....
Milwaukee, Wis	373,857	119	11	4	31	....	41	1	....	....	18	8	21	3
Newark, N. J	347,469	98	21	1	....	1	23	....	....	....	26	14	....	....
New Orleans, La	339,075	183	5	2	4	....	10	....	6	....	26	22	2	2
San Francisco, Cal	416,912	150	1	....	253	3	3	....	....	....	13	14	4	1
Washington, D. C	331,069	134	9	....	3	....	7	....	....	....	31	11	2	....
Cities having from 200,000 to 300,000 inhabitants.														
Jersey City, N. J	267,779	76	....	....	....	....	....	....	....	....	....	9	....	....
Kansas City, Mo	248,381	43	7	....	6	....	7	....	3	....	8	15	3	1
Providence, R. I	224,326	74	19	8	13	....	9	1	....	....	....	5	1	....
Seattle, Wash	237,194	32	5	....	11	....	....	....	....	....	3	2	5	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	33	5	1	3	....	9	....	....	....	6	....	....	....
Cambridge, Mass	104,839	30	7	1	2	....	6	....	....	....	4	2	1	....
Columbus, Ohio	181,548	71	3	1	46	1	18	....	....	....	7	7	1	1
Dayton, Ohio	116,577	40	....	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	....	5	1	3

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 24, 1912—Continued.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 100,000 to 200,000 inhabitants—Con.														
Fall River, Mass	119,295	44	5	1	3		3				2	7		1
Grand Rapids, Mich	112,571	33					4				4	4	4	
Lowell, Mass	106,294	41	2		27	1	3				4	1		
Nashville, Tenn	110,364	41					2				4	3	2	
Oakland, Cal	150,174	43	8		1		3				1	4		
Omaha, Nebr	124,096	25	2				2					1		
Richmond, Va	127,628	44	5		14						7	2		
Spokane, Wash	104,402		1		10		3		13			2	2	
Toledo, Ohio	168,497	66	3		11		4		1			5	1	1
Worcester, Mass	145,986	51	10	1			8				7	1		
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	26	2									2		
Bayonne, N. J	55,545	17	1		1		4	1			2	3		
Brockton, Mass	56,878	18	1		76		1				1	1		
Camden, N. J	94,538	12	1				3				5		3	
Duluth, Minn	78,466	14					5		2		2	2		
Elizabeth, N. J	73,409	32	5	2	2	2	7				1	2	1	1
Erie, Pa	66,525	17	6								6		3	
Evansville, Ind	69,647	16	4								2	4	6	2
Fort Wayne, Ind	63,933	17	2		3							1		
Harrisburg, Pa	64,186	28	4		23		1					1	2	2
Hartford, Conn	98,915		7	1			4				7	3		
Hoboken, N. J	70,324	9	2		1		4				2			
Johnstown, Pa	55,482	22	2				3					2		
Kansas City, Kans	82,331		1		1		1		2		5		9	
Lawrence, Mass	85,892	20	2	1			7					1	2	
Lynn, Mass	89,336	31	1		3		6	1			6		1	
Manchester, N. H	70,063	26	8	1					4		2	2		
New Bedford, Mass	96,652	32			22		6				10	3	4	
Oklahoma City, Okla	64,205	21	1				1				2	3		
Passaic, N. J	54,773	22	1		4		1					3		
Pawtucket, R. I	51,622											2		
Reading, Pa	96,071	27	9		3		2				2	2		
Saginaw, Mich	50,510		4	1			2						6	1
San Antonio, Tex	96,614	40			30		3					7	1	
Schenectady, N. Y	72,826	16	1		14		2				7	2		
South Bend, Ind	53,684	20							1			2	3	
Springfield, Ill	51,678	27	5				1		1			2		1
Springfield, Mass	88,926	29	2		23		3				2	2	1	
Trenton, N. J	96,815	36	1				5				7	5	1	1
Wilkes-Barre, Pa	67,105	26	2	1	21		2				7	1		
Yonkers, N. Y	79,803	17	3		10		10				3	3		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	4	1											
Aurora, Ill	29,807	9	1				4							
Binghamton, N. Y	48,443	20			1		2					1		
Brookline, Mass	27,792	6	1		1		1				1			
Butte, Mont	39,165	12			1		3				1			
Chattanooga, Tenn	44,604						2	1			2			
Chelsea, Mass	32,452	18	1		4		1				1			
Chicopee, Mass	25,401	5			1						2	1		
Danville, Ill	27,871	4										1		
East Orange, N. J	34,371	6	1				2				1			
Elmira, N. Y	37,176	9	2	1										
El Paso, Tex	39,279	31							4	2		3		
Everett, Mass	33,484	15	2				2					1		
Fitchburg, Mass	37,826	11	1								1	2		
Haverhill, Mass	44,115	17	3		13						3		1	
Kalamazoo, Mich	39,437	23					11	2			2	1	1	1
Knoxville, Tenn	36,346	11			2				11		2	2		
La Crosse, Wis	30,417	3	2				1							
Lancaster, Pa	47,227		1		11		1						1	
Lexington, Ky	35,099	16			3		3				2	2		
Lima, Ohio	30,508	8	2		1							1		

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 24, 1912—Continued.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants—Con.														
Lynchburg, Va	29,494	13	2		25		2				1	1		
Montgomery, Ala	38,136	16	2		21		1		1		2	2	1	
Mount Vernon, N. Y	30,919				28						1			
Newcastle, Pa	36,280		7				1				1		8	
Newport, Ky	30,309	11	3				3				1	1	1	1
Newton, Mass	39,806	11	1		16		2				2		1	
Niagara Falls, N. Y	30,445	12	3				2					1	9	
Norristown, Pa	27,875	9	2		57	2	1					2		
Orange, N. J	29,630	10	1	1	3		5							
Pasadena, Cal	30,291	13	2								1	2		
Pittsfield, Mass	32,121	9	3								1	1		
Portsmouth, Va	33,190	7	3		1				2					
Racine, Wis	38,002	10	7											
Roanoke, Va	34,874	6	1		28									
Rockford, Ill	45,401	15					1					2	[1]170	3
Salem, Mass	43,697	13					1					1		
San Diego, Cal	39,578		1		2		1				6	6		
South Omaha, Nebr	26,259	7	1											
Superior, Wis	40,384	6							2					
Taunton, Mass	34,259	15			3						1			
Waltham, Mass	27,834	11	2		9								1	
West Hoboken, N. J	35,403	9	3		2		1				1	2		
Wheeling, W. Va	41,641	9	2				1				1	1	1	
Williamsport, Pa	31,860	7					4					2		
Wilmington, N. C	25,748	14			5		1		3		2	3	1	
York, Pa	44,750				1		2				2			
Zanesville, Ohio	28,026	9	1									4	3	1
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,383	7			1						2			
Ann Arbor, Mich	14,817	7												
Beaver Falls, N. Y	12,191	0					3							
Bennington, Vt		6					2							
Braddock, Pa	19,957											1		
Butler, Pa	20,782	10	1								1			
Cambridge, Ohio	11,327	3			4		1							
Camden, S. C		1										1		
Carbondale, Pa	17,040	7					2							
Clinton, Mass	13,075	5					1				1	2		
Columbus, Ga	20,544	7												
Columbus, Ind		0							1					
Concord, N. H	21,497	13			2							1		
Cumberland, Md	21,839	8	3		1		1				4		4	
Dunkirk, N. Y		4												
Gloucester, Mass	24,398	12										2		
Harrison, N. J	14,498	3												
Kearny, N. J	18,659	8	1		6		1		2					
La Fayette, Ind	20,081	7			4									
Lebanon, Pa	19,240						1							
Logansport, Ind	19,050	8										1		
Manistee, Mich							7							
Marinette, Wis	14,610	5			2									
Marlboro, Mass	14,579	7	2											
Massillon, Ohio							1							
Medford, Mass	23,150	15			4		1				1			
Melrose, Mass	15,715	4			15	1	1							
Moline, Ill	24,199	6	1									2	1	
Montclair, N. J	21,150	6					2				1			
Morristown, N. J	12,507	4										1		
Nanticoke, Pa	18,507	9			9						8			
Newburyport, Mass	19,240	7	1								1			
North Adams, Mass	22,012	1	1		3									
Northampton, Mass	19,431	12					1				3			
Ottumwa, Iowa	22,012	13					1							
Palmer, Mass		7												
Peekskill, N. Y		3	1											
Plainfield, N. J	22,050				38						2			

[1] Epidemic.

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Feb. 24, 1912—Continued.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants—Continued.														
Pottstown, Pa		4			2									
Saratoga Springs, N. Y		3											1	
South Bethlehem, Pa	19,973	6	1		3							1		
Steelton, Pa	14,246	9	3						1		2	1		
Warren, Pa	11,081	3	2		1									
Wilkinsburg, Pa	18,924	7			1		3				3		1	
Woburn, Mass	15,308	7			7									

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

CALIFORNIA.—Month of September, 1911. Population, 2,377,549. Total number of deaths from all causes 2,532, including diphtheria 11, measles 4, scarlet fever 3, tuberculosis 373, typhoid fever 45. Cases reported: Diphtheria 60, measles 232, plague 1, scarlet fever 69, smallpox 19, tuberculosis, pulmonary, 217, typhoid fever 120.

MASSACHUSETTS.—Week ended December 2, 1911. Population of reporting towns, 2,593,485. Total number of deaths from all causes 675, including diphtheria 4, measles 2, scarlet fever 3, tuberculosis 62, typhoid fever 5. Cases reported: Diphtheria 136, measles 180, scarlet fever 114, tuberculosis 99, typhoid fever 38.

Week ended December 9, 1911. Total number of deaths from all causes 713, including diphtheria 13, scarlet fever 2, smallpox 2, tuberculosis 64, typhoid fever 6. Cases reported: Diphtheria 142, measles 202, scarlet fever 126, tuberculosis 133, typhoid fever 30.

Week ended December 16, 1911. Total number of deaths from all causes 708, including diphtheria 10, measles 4, tuberculosis 76, typhoid fever 7. Cases reported: Diphtheria 139, measles 309, scarlet fever 154, tuberculosis 146, typhoid fever 30.

Week ended December 23, 1911. Total number of deaths from all causes 670, including diphtheria 10, measles 3, scarlet fever 3, tuberculosis 66, typhoid fever 6. Cases reported: Diphtheria 143, measles 251, scarlet fever 109, smallpox 2, tuberculosis 130, typhoid fever 27.

Week ended December 30, 1911. Total number of deaths from all causes 803, including diphtheria 9, measles 3, scarlet fever 2, tuberculosis 66, typhoid fever 3. Cases reported: Diphtheria 164, measles 251, scarlet fever 110, tuberculosis 116, typhoid fever 22.

NEW JERSEY.—Four weeks ended February 10, 1912. Population, 2,537,167. Total number of deaths from all causes 3,696, including diphtheria 61, measles 14, scarlet fever 16, tuberculosis 424, typhoid fever 28.

FOREIGN AND INSULAR.

AUSTRALIA.

Sydney—Examination of Rats.

The following information was taken from the bulletin issued by the department of health of New South Wales:

During the three weeks ended January 27, 1912, 1,286 rats were examined for plague infection. No plague-infected rat was found.

The last case of human plague was reported May 29, 1909.

The last plague-infected rat was found April 25, 1910.

CHILE.

Sanitary Measures at Chilean Ports.

The following translation of a decree issued December 26, 1911, by the ministry of foreign relations of Chile was received from Minister Fletcher at Santiago de Chile:

1. The only diseases liable to quarantine, for the purposes of sanitary treatment of the ships in ports of the Republic, are bubonic plague, cholera, and yellow fever.
2. In the case of a person suffering from leprosy, trachoma, or other transmissible chronic disease, the ship shall be received in free pratique on condition that the patient, passenger, or member of the crew be strictly and satisfactorily isolated on board the ship, not being permitted to disembark at any time, and his articles of personal use being disinfected.
3. The ships that put into Chilean ports with persons aboard sick with beriberi will not have to submit, merely because of the presence of this disease among their passengers or crew, to any sanitary measures, and receive free pratique.
4. In respect to the sanitary treatment of vessels infected or suspected of infection proceeding from the north, the sanitary doctors of the different ports of the Republic shall attend strictly to the treatment prescribed by the chief of the sanitary station of Africa, in accordance with the provision of decree No. 2909 of June 26, 1909.

EGYPT.

Cairo—Typhus Fever.

Deputy Consul Belrose reports the occurrence of 6 deaths from typhus fever at Cairo during the two weeks ended January 27.

GREECE.

Cerebrospinal Meningitis.

Consul General Gale reports February 15: During the two weeks ended February 13 a death from cerebrospinal meningitis occurred at Piraeus. The disease is prevalent in practically all parts of the country.

HAWAII.

Plague-infected Rats at Honokaa.

Chief Quarantine Officer Ramus reports the finding of 49 plague-infected rats at Honokaa during the week ended March 2.

Mosquito-eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy, who is detailed as sanitary adviser to the governor of the Territory of Hawaii:

Mosquito-eradication measures conducted at Honolulu from Feb. 12 to 17, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Ordered cleaned.	Oiled.	Drained.	Emptied.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.
Gutters, house	2,494	31	88	3	5	3	......	36	1	......
Gutters, street	822	12	8	24	......	......	......	......	10	[illegible]
Standing water	458	61	5	95	37	......	42	1	......	[illegible]
Cesspools	1,026	22	7	6	......	......	4	21	......	......
Privy vaults	1,131	1	17	14	......	......	......	40	......	......
Holes and low places	423	56	3	32	15	......	76	6	......	......
Catch basins	380	5	18	2	......	1	1	1	......	......
Leaky fixtures	87	1	......	......	......	......	......	45	......	......
Plants, etc	131	......	......	......	......	......	......	......	......	......
Swamps	21	6	......	......	2	......	......	......	......	[illegible]
Ponds	49	7	......	1	1	......	......	......	......	[illegible]
Troughs and tanks	224	11	12	......	7	17	......	......	......	[illegible]
Tubs or other receptacles	643	105	3	1	......	219	......	......	4	......
Tin cans, bottles	994	94	52	......	......	402	......	......	......	......
Water barrels	727	30	......	1	......	346	......	......	1	[illegible]
Vacant houses	97	3	......	......	......	......	......	......	......	......
Grease traps	80	......	......	......	......	......	......	......	......	......

Legal notices to abate nuisances served	[illegible]
Nuisances abated	[illegible]
Wagon loads of tin cans, bottles, etc., collected	[illegible]

ITALY.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo week ended February 17, 1912.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Feb. 12	San Giovanni	New York	......	......	......
13	Luisiana	do	269	15	[illegible]
14	Venezia	do	466	90	[illegible]
14	Oceania	do	747	120	[illegible]
15	San Giovanni	do	233	10	[illegible]
17	Cedric	do	776	110	[illegible]
	Total		2,491	345	[illegible]

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Feb. 12	Mongibello	New York	......	......	......
12	Luisiana	do	......	......	......
16	San Giovanni	do	107	125	[illegible]
17	Franconia	do	......	......	......
17	Argentina	do	......	......	......
	Total		107	125	[illegible]

Palermo—Smallpox.

Consul De Soto has reported smallpox at Palermo as follows: From June 4 to November 25, 1911, 2,428 cases with 1,104 deaths; from November 26, 1911, to February 10, 1912, 2,182 cases with 735 deaths; and during the week ended February 17, 97 cases with 31 deaths.

MEXICO.

Typhus Fever.

At Aguascalientes Consul Schmutz reported 1 death from typhus fever during the week ended February 18.

At Guadalajara Consul Magill reported 1 case with 1 death during the week ended February 24.

At Mexico City Consul General Shanklin reported the occurrence of 53 cases with 11 deaths during the week ended January 20.

Yellow Fever in Merida and Vicinity.

During the week ended February 24, 3 cases of yellow fever were reported at Merida. The total number of cases reported since August 1, 1911, is 63 with 29 deaths.

At the hacienda of Kambul, 57 kilometers distant from Merida, 7 deaths from yellow fever were reported under date of February 27.

RUSSIA.

Typhus Fever.

At Odessa Consul Grout reports the occurrence of 132 cases of typhus fever with 6 deaths during the week ended February 3.

At St. Petersburg Vice Consul Vezey reports 12 cases of typhus fever with 1 death for the 2 weeks ended January 27.

SOUTH AFRICA.

Plague at Durban, Natal—Rat Infection.

Consul Stewart reports January 27: Two cases of plague, both of which were fatal, have developed since the beginning of the outbreak, January 14. Mortality among rats continues and 8 foci of rat infection were reported to January 26. All but one of these foci are along the wharf frontage. One discovered January 23 is situated near the business center of the city.

Plague Rats in Durban—Precautionary Measures.

The following information, dated January 27, was received from the department of the interior of the Union of South Africa:

Infected rats were found at two places within the Durban borough January 21 and 23, respectively, and there are several foci of rat infection in the harbor area. Precautionary measures are being carried out on an extended scale. The premises in which rats have been found have been thoroughly disinfected and stringent precautions have been taken to prevent the escape of rodents from such premises. The greatest care is being exercised to prevent the possibility of infection being conveyed by means of cargo of every description. The systematic destruction of rats is being undertaken and thorough sanitary inspection made.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED MAR. 15, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Jan. 14-20	8	6	
Madras	Jan. 29-Feb. 3	19	18	
Negapatam	Jan. 14-20		23	
Indo-China:				
Saigon	Jan. 16-29	291	196	
Turkey in Asia and Europe:				
Provinces	Jan. 6-21	53	50	
Aleppo	Feb. 4-10	10	7	

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Ceará	Jan. 1-31		1	
Manaos	Feb. 4-10		5	
Mexico:				
Kambul, hacienda	Feb. 21-27		7	
Merida	do	3		

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Para	Feb. 11-17		2	
Egypt:				
Provinces	Jan. 26-Feb. 15			
Assouan	Jan. 29-Feb. 15	13	7	
Garbieh	Feb. 9-12	3		
Kena	Feb. 15	3	1	
India:				
Bombay	Jan. 29-Feb. 3	16	11	
Karachi	do	15	15	
Indo-China:				
Saigon	Jan. 16-22	2	2	
Java:				
Pasoeroean Residency	Jan. 21-27	5	4	
Mauritius	Dec. 15-21	5	3	
Peru:				
Trujillo	Feb. 21	34		In the lazaretto.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
Fernie	Feb. 26-Mar. 2	2		
Montreal	do	1		
Ottawa	do	9		
Quebec	do	7	1	
China:				
Chienghai	Jan. 29-Feb. 3			Present.
Hankow	Jan. 21-27	1		
Hongkong	do	40	28	
Kityang	do			Do.
Shanghai	Jan. 30-Feb. 4	1	2	Deaths among natives.
France:				
Paris	Feb. 4-10	5		
Great Britain:				
West Hartlepool	Feb. 18-24	1		
Hungary:				
Budapest	Feb. 4-10	25		
India:				
Bombay	Jan. 29-Feb. 3	11	6	
Italy:				
Leghorn	Feb. 18-24	1		
Naples	Feb. 11-17	6		
Palermo	do	97	21	
Turin	Feb. 12-18	2		
Japan:				
Kobe	Jan. 22-28	1		From s. s. Shingo Maru.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended Mar. 15, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Java:				
Batavia	Jan. 21-27	3	1	
Mexico:				
Juarez	Feb. 18-24	3	1	
Magdalena	Feb. 11-24	91	2	
Mazatlan	Feb. 21-27		1	
Mexico	Jan. 14-20	15	8	
Salina Cruz	Feb. 11-17	2	1	
San Luis Potosi	Dec. 24-30		1	
Russia:				
St. Petersburg	Feb. 3	10	2	
South Africa:				
Durban	Jan. 21-27	1		
Johannesburg	Jan. 7-27	29		
Spain:				
Barcelona	Feb. 6-12		1	
Cadiz	Jan. 1-31		8	
Valencia	Feb. 11-17	16		
Teneriffe:				
Santa Cruz	Feb. 4-17		7	
Turkey in Asia:				
Constantinople	Feb. 12-18		12	
Uruguay:				
Montevideo	Dec. 1-31	2		

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAR. 8, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total Sept. 24-Dec. 2: Cases, 1,637; deaths, 1,167.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India:				
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Calcutta	Nov. 5-Jan. 28		378	
Madras	Nov. 26-Jan. 27	433	357	Madras Presidency, Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545.
Rangoon	Oct. 1-Nov. 30	6	3	
Indo-China:				
Saigon	Nov. 20-Jan. 15	1,121	782	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 8, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 31			Present.
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 1[illegible]; deaths, 42, including report, p. 2094, vol. 1.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Dolliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 96; deaths, 51, including report, p. 2[illegible], vol. 1.
Belgrade, district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Dec. 30		550	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 4[illegible]; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops.
Acre	Jan. 21	7	6	In vicinity.
Adana	Dec. 2-6	16	5	
Aleppo	Jan. 26-Feb. 3	16	8	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,6[illegible]; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Manaos	Nov. 19-Feb. 3		13	
Para	Dec. 9-16	1	1	
Pernambuco	Jan. 1-15		2	
Ecuador:				
Bucay	Nov. 16-30	2		
Duran	Dec. 1-15	3	2	
Guayaquil	Nov. 16-Dec. 15	20	11	
Milagro	do	8	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 8, 1912.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Maxcanu	do	1		
Merida	Nov. 12-Feb. 3	15	9	Total Aug. 1-Feb. 24: Cases, 63; deaths, 29.
Puerto Mexico (Coatzcoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Jan. 15	25	8	
La Guaira	Feb. 27			Present.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Jan. 27	18	10	
Pernambuco	Oct. 16-Jan. 16		4	
Rio de Janeiro	Nov. 12-Dec. 23	6	3	
British East Africa:				
Kismayu	Oct. 15-26	2		1 case pneumonic.
British South Africa:				
Durban	Jan. 17	2	1	
Chile:				
Iquique	Nov. 12-Jan. 6	10	4	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9-Jan. 13	7	5	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1,817; deaths, 1,324.
Pasoeroean Residency, Malang District.	Nov. 12-Jan. 20	72	36	
Soerobaya	Oct. 17-27	2		
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Ecuador:				
Guayaquil	Nov. 16-Dec. 15	102	42	
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1-26	12	9	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	Jan. 1-Feb. 15	14	8	
Behera	Jan. 1-25	3	2	Sept. 11-16: Cases, 11; deaths, 8.
Fayoum	Jan. 1-26	1	1	
Galioubeh	Jan. 1-Feb. 8	1	1	Oct. 5-Dec. 26: Cases, 1.
Garbieh	Jan. 1-26	1		
Kena	do	1	1	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Minieh	Jan. 1-Feb. 1	3	2	Dec. 13: Cases, 1.
Hawaii:				
Honokaa	Feb. 9-25	3	3	
India:				
Bombay	Nov. 19-Jan. 20	80	70	
Calcutta	Nov. 11-Feb. 6		46	
Karachi	Nov. 26-Jan 20	39	37	Total year 1911: Cases, 3,273; deaths, 3,046.
Rangoon	Oct. 1-Nov. 30	38	30	
Bombay Presidency and Sind.	Oct. 29-Dec. 30	35,557	25,896	
Madras	Jan. 1-6			
Madras Presidency	Oct. 29-Dec. 30			

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 8, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Bengal	Oct. 29-Dec. 30	3,893	2,827	
United Provinces	do	12,270	10,459	
Punjab	do	1,229	895	
Burma	do	206	187	
Central Provinces	do	6,883	5,234	
Coorg	do	75	42	
Mysore State	do	4,913	3,801	
Hyderabad State	do	10,830	10,038	
Central India	do	4,242	3,486	
Rajputana and Ajmere Merwara.	do	457	362	
North West Province	Oct. 29-Dec. 9	1	1	Total for India, Oct. 29-Dec. 30: Cases, 85,243; deaths, 66,997. Total, year 1911: Cases, 828,535, deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Jan. 1	21		
Mauritius	Nov. 3-Dec. 7	36	26	
Peru:				
Departments—				
Callao	Oct. 1-21	1		In November 1 case, in January 3 cases with 2 deaths.
Chiclayo	do	12	4	
Chosika	do	1	1	
Lambayeque	do	3		
Libertad	do	8		
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Dec. 2		2	
Straits Settlements:				
Singapore	Nov. 5-Jan. 6	17	16	
Turkey in Asia:				
Jiddah	Jan. 13-15	2		

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Jan. 15	5	3	And vicinity.
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	Oct. 1-Nov. 30		31	
Austria-Hungary:				
Bohemia	Jan. 14-20	1		
Galicia	Dec. 24-30	1		
Krain	Jan. 14-20	7		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-20	1		
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Jan. 15		388	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Jan. 20	4	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Nelson	Dec. 24-30	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-20	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Feb. 17	60		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-Feb. 10	2	1	
Windsor	Feb. 4-10	2		
Quebec—				
Montreal	Dec. 17-Feb. 17	20		
Quebec	Dec. 10-Feb. 24	235	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 8, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Iquique	Dec. 10-16	2		
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		Feb. 10—Present.
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chungking	Nov. 18-Jan. 6			Present.
Hongkong	Nov. 12-Jan. 20	169	126	
Nanking	Dec. 10-Feb. 3			Do.
Shanghai	Dec. 11-Jan. 21		3	
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-Jan. 14	3		
France:				
Marseille	Jan. 1-31		3	Nov. 1-30, 1 death.
Paris	Dec. 3-Jan. 27	63	5	
Germany				Total, Dec. 31-Feb. 17: Cases, 23.
Hamburg	Jan. 21-27	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
London	Jan. 14-Feb. 10	4	1	
India:				
Bombay	Nov. 19-Jan. 27	137	66	
Calcutta	Nov. 19-Feb. 6		18	
Madras	Nov. 26-Jan. 27	56	33	
Rangoon	Oct. 1-Nov. 30	29	9	
Indo-China:				
Saigon	Nov. 13-Jan. 29	25	1	
Italy:				
Genoa	Dec. 1-Jan. 31	33	2	
Leghorn	Dec. 16-Feb. 17	91	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-Feb. 10	62	1	
Palermo	Nov. 26-Feb. 10	2,182	735	
Turin	Jan. 15-Feb. 4	3		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	1	1	Jan. 20, 1 case from s. s. Suveric from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Java:				
Batavia	Nov. 12-Jan. 20	24	5	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Feb. 11		5	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Feb. 17	4	2	
Juarez	Dec. 19-Feb. 10	9	4	
Magdalena	Dec. 23-Feb. 7		47	Feb. 7, 02 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-Jan. 30		9	Feb. 13, 33 cases in the lazaretto.
Mexico	Nov. 26-Jan. 13	46	25	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Feb. 24		32	
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Dec. 2	3		
Tampico	Dec. 1-Feb. 20		10	
Tapachula	Nov. 1-Dec. 31		14	
Portugal:				
Lisbon	Dec. 9-Feb. 17	35		
Russia:				
Batum	Dec. 1-31			
Libau	Dec. 17-23			

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 8, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia—Continued.				
Moscow	Nov. 19–Feb. 3	26	10	
Odessa	Nov. 26–Jan. 13	10	1	
Reval	Nov. 1–30	1		
Riga	Dec. 24–Jan. 27	16		Oct. 1–Nov. 30; deaths, 2.
St. Petersburg	Nov. 19–Jan. 27	112	20	
Warsaw	Nov. 5–Dec. 2		185	
Siam:				
Bangkok	Nov. 5–Dec. 30		626	
Siberia:				
Omsk	Jan. 1–31	7		
Spain:				
Cadiz	Nov. 1–Dec. 31		14	
Madrid	Dec. 1–Jan. 31		3	
Malaga	Nov. 1–30		45	
Seville	Dec. 1–31		5	
Valencia	Dec. 3–Feb. 10	149	11	
Straits Settlements:				
Singapore	Nov. 19–Jan. 13	18	7	
Switzerland:				
Cantons—				
Oberwalden	Jan. 14–20	1		
Zurich	Dec. 3–23	6		
Teneriffe:				
Santa Cruz	Dec. 3–Feb. 3		35	
Turkey in Asia:				
Beirut	Dec. 3–Feb. 17	855	77	
Turkey in Europe:				
Constantinople	Dec. 4–Feb. 4		53	
Uruguay:				
Montevideo	Sept. 1–Nov. 30	23	4	
Venezuela:				
Caracas	Nov. 1–Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28–Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aleppo	Feb. 10	200,000				7								
Aix-la-Chapelle	Feb. 3	157,509	64	8								2		
Amsterdam	Feb. 17	580,962	188	25						1		3		6
Antwerp	Feb. 10	316,604	85	5							2	1		1
Athens	Feb. 1–13	250,010	172	33							1	1		
Barcelona	Feb. 24	591,272		63				1		7	1	6	1	
Beirut	Feb. 10	80,000						10		8				
Belfast	Feb. 17	385,492	248	29						2				17
Berlin	Feb. 10	2,087,929	660	106							6	28	4	3
Birmingham	Feb. 17	842,512	285							2	2		1	16
Bombay	Feb. 3	977,822	700	40	11			27					8	
Bordeaux	Feb. 17	253,000	198	18								2	2	
Do	Feb. 24	253,000	120	12									2	1
Bremen	Feb. 3	246,850	70	7									4	
Bristol	Feb. 17	359,400	172	10								1	1	
Brussels	Feb. 10	739,684	257	25						2	1	1	4	1
Do	Feb. 17	739,684	242	31									1	2
Budapest	Feb. 3	1,000,000									5	2	6	1
Catania	Feb. 23	207,000	101	5							2	1	2	

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Christiania	Feb. 10	245,000	64	11							2	1		
Do.	Feb. 17	245,000	81	14								1	1	
Coburg	Feb. 3	24,299	7	1								1		
Cologne	Feb. 10	525,671	153	20								1	4	2
Copenhagen	Feb. 3	465,000	123	19							2		2	3
Dalny	..do....	47,695	22	2							1			
Dresden	..do....	555,800	159	19						1	2	5		4
Dublin	Feb. 10	406.536	219	28						1	1	3	4	5
Dundee	Feb. 17	171,006	61	3								2		
Durban	Jan. 27	69,165	22	1						1				
Edinburgh	Feb. 17	321,200	139	14									4	1
Erfurt	Feb. 10	126,010	47	4								3		
Frankfort	Jan. 27	423,600	81								1	2		
Do.	Feb. 3		98							1		3		
Glasgow	Feb. 23	785,600	387							2	1	3	42	3
Gothenberg	Feb. 10	170,100	55	10						1		1		1
Greenock	Feb. 17	75.900	39										4	4
Guadalajara	Feb. 24	119,468	67						1					
Hamburg	Feb. 10	953,079	304	42						1	5	7		1
Do.	Feb. 17		263	30							3	12	2	2
Havre	..do....	136,159	76	11									1	1
Hongkong	Jan. 27	336,488	76					28						
Juarez	Feb. 24	6.500	8	1				1						
Karachi	Feb. 3	148,000	111		15								12	
Kharput	..do....	21,000								1			2	
Konigsberg	..do....	251,000	108	11									2	7
Do.	Feb. 10		121	8									4	4
Leeds	Feb. 17	445,568	6							1	2	2		1
Leghorn	Feb. 24	104,000	35											
Leipzig	Feb. 3	605,755	175	21						2		3		1
Liege	..do....	167,521	56	3							1			1
Liverpool	Feb. 17	752,055	288	24							3	2	2	7
Lubeck	..do....	100,000	34	4									1	
Lyon	Jan. 13 Feb. 10	523,796	935	147						4	1	12	21	
Madras	Feb. 3	518,660	459			18		6		1				
Manaos	Feb. 10	52,000	48	4			5							
Manchester	Feb. 17	631,533	342	21								1	11	16
Mannheim	Jan. 27	193,500	38	4							1			
Do.	Feb. 3	200,000	55	8							1			
Mazatlan	Feb. 27	22,000	19	3				1						
Mexico	Jan. 20	719,052	414					8	11			1	5	4
Montreal	Mar. 2	466,197	159	23						2		1		3
Moscow	Feb. 8	1,500,000	798	105				1		4	19	11	29	10
Munich	Feb. 10	610,000	198	23									1	
Nagasaki	Feb. 4	179,257	37	8						1				
Nantes	Feb. 18	170,455	72	15						1		2		
Do.	Feb. 25		68	20							1			
Niagara	..do....	10,000	4									1		1
Nottingham	Feb. 10	259,942	130	14								3	4	2
Ottawa	Feb. 24	90,000	26	5										
Palermo	Feb. 17	340,000	155	3				31		4	1			
Para	..do....	185,000	90	3	2									
Paris	Feb. 10	2,888,110	1,210	255						7	3	7	21	9
Porfirio Diaz	Feb. 24	16,000	7	1				1						
Port of Spain	Jan. 27 Feb. 17	60,000	122	23						12				
Prague	Feb. 3	225,204	78	19							1		3	1
Do.	Feb. 10		98	12							1		5	
Progresso	Feb. 17	6,959	7	1									1	
Quebec	Mar. 2	78,200						1						1
Rome	Nov. 4 Nov. 18	523,796	49							16		4		2
Saigon	Jan. 22	220,000	124		2	122								
Do.	Jan. 29		75			74		1						
St. Petersburg	Feb. 3	1,907,708	116					2		19	13	36	13	7
Salina Cruz	Feb. 17	6,138	9					1		1				
Santa Cruz	Feb. 10	46,000	14	3				2						
Santiago de Cuba	Feb. 24	53,614	16	1							1			
Shanghai	Feb. 4	500,000	212	26				2			3	3	32	

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Singapore	Jan. 20	303,328	22		2					2				
Smyrna	Jan. 27	400,000	98	12						2	1			
Southampton	Feb. 17	120,891	39	3								1		
Do	Feb. 24		38	4								1		1
Stettin	Feb. 10	237,000	87	5								1		
Stockholm	Feb. 3	343,832	113	12								4	2	
Do	Feb. 10		115	18								2	4	
Stoke-on-Trent	Feb. 17	237,153	84	7						2	2		3	
Talcahuano	Feb. 10	28,000	5	2										1
Tarragona	Feb. 17	23,150	8										1	
Trieste	Feb. 3	233,599	119							2		1	5	1
Do	Feb. 10		116							1		1	1	4
Turin	Feb. 18	430,770	161	12						1		2	2	
Vienna	Feb. 3	2,064,583	729	116							5	7	5	6
Vigo	Feb. 10	41,500	17	2								2		
Do	Feb. 17			2								1		
Winnipeg	Feb. 24	151,958	24								1			

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

ALGERIA—*Algiers.*—Month of January, 1912. Population 172,397. Total number of deaths from all causes 344, including diphtheria 1, measles 2, tuberculosis 45, typhoid fever 9.

Oran.—Month of January, 1912. Population 123,086. Total number of deaths from all causes 261, including measles 1, smallpox 1, tuberculosis 22, typhoid fever 4.

BRAZIL—*Pernambuco.*—Two weeks ended January 15, 1912. Population 225,000. Total number of deaths from all causes 397, including plague 2, smallpox 65, tuberculosis 57, yellow fever 2.

FRANCE—*Marseille.*—Month of January, 1912. Population 550,619. Total number of deaths from all causes 861, including diphtheria 12, measles 1, scarlet fever 2, smallpox 3, tuberculosis 115, typhoid fever 12.

GREAT BRITAIN.—Week ended February 10, 1912:

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 21.6 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 31 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Queenstown, viz, 6.6, and the highest at Belfast, viz, 41.7 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 22.8 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Govan, viz, 10.4, and the highest at Perth, viz, 31.8 per 1,000. The total number of deaths from all causes was 953, including diphtheria 13, measles 62, scarlet fever 3, typhoid fever 3.

ITALY—*Genoa.*—Two weeks ended February 15, 1912. Population, 272,077. Total number of deaths from all causes 123, including diphtheria 2, tuberculosis 15.

Milan.—Month of January, 1912. Population, 602,236. Total number of deaths from all causes 122, including diphtheria 8, scarlet fever 2, tuberculosis 103, typhoid fever 6.

SOUTH AFRICA—*Johannesburg.*—Month of January, 1912. Population, 237,220. Total number of deaths from all causes 396, including diphtheria 3, measles 2, tuberculosis 60, typhoid fever 17.

SPAIN—*Cadiz.*—Month of January, 1912. Population, 67,306. Total number of deaths from all causes 214, including diphtheria 4, smallpox 8, tuberculosis 17, typhoid fever 1.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

VOL. XXVII. MARCH 22, 1912. No. 12.

THE NECESSITY FOR SAFE WATER SUPPLIES IN THE CONTROL OF TYPHOID FEVER.[1]

By Allan J. McLaughlin, Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

The excessive prevalence of typhoid fever in the United States has been characterized, and not without reason, as a national disgrace. Certainly that portion of our typhoid prevalence which is due to polluted water supplies is preventable, and our failure to prevent does not redound to our credit. The rather common use of sewage polluted water supplies without purification has been responsible for disaster in the shape of typhoid-fever epidemics in our cities, with a frequency not pleasant to contemplate. Such supplies untreated and unfiltered are exposed also to contamination from persons ill with or harboring the germs of Asiatic cholera should such persons gain access to the United States.

It is useless to expect that the dejecta of all persons ill with typhoid fever or cholera will be properly disinfected before reaching the sewers, especially if the contributor is a carrier who shows no signs of illness. It is evident that the surest and most prompt protection against water-borne diseases can be afforded in each case by proper treatment or filtration of the public water supplies. With cholera, we have only the menacing possibility, but with typhoid fever we have the actual existence of the disease in such a high rate of prevalence that the United States suffers seriously by comparison with other civilized countries.

The average American citizen displays toward sanitary problems a very dangerous apathy. It is difficult to arouse his interest in anything so well known as typhoid fever. Cholera or plague or any scourge which to him suggests a quick and mysterious death will awaken his instinct of self-preservation and arouse him to activity; not so typhoid fever. It has been all about him always, excites no terror, and is viewed indifferently as an inevitable visitation which comes every year and takes its toll from the community. He never asks himself, Is this visitation inevitable? Or, May not typhoid fever be prevented or reduced? Twenty deaths per 100,000 probably represent 200 cases of typhoid fever. Suppose 200 cases of Asiatic cholera occurred in any American city of 100,000 population, would not strenuous activity be displayed and very properly so for the eradication of the scourge? Although the case mortality rate of typhoid fever is lower than that of cholera, yet typhoid fever is transmissible in more ways, is more expensive in its lingering course, and more disastrous in its sequelæ than Asiatic cholera. The mental attitude toward typhoid fever, displayed by many physicians and especially health officers, is scarcely more commendable. Their complacency in the face of typhoid fever rates of above 20 deaths annually per 100,000 population is difficult to explain. If the rate is below 20, many municipal officials are inclined to be satisfied with this rate as it is low compared with less fortunate cities.

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[1] Read Mar. 5, 1912, before the Illinois Water Supply Association at Urbana, Ill.

What may be considered a low rate for typhoid fever? Table 1 shows the death rates per 100,000 population in 10 large European cities. The average for 10 years is given in the first column. The average for 5 years in the second column. The other columns show the rate for the individual years from 1906 to 1910, inclusive. The figures are given for 10 years to show that the low rates are consistent and not a mere coincidence. These 10 cities represent a population of about 15 million persons, and the average death rate per 100,000 population for the 10 years was only 3.4. The rates are gradually getting lower and the rate for these 10 cities combined, with a population of 15 millions, was only 2.5 in 1910.

TABLE 1.—*Annual death rates from typhoid fever per 100,000 population in 10 European cities.*

	Average for 10 years, 1901-1910.	Average for 5 years, 1901-1905.	1906	1907	1908	1909	1910
Stockholm	1.7	3	2	2	1	5	1.8
Christiania	2.4	3	4	2	2	1.7	1.6
Munich	2.5	4	2	3	3	1.9	1.4
Edinburgh	2.9	8	3	3	2	1.2	.3
Vienna	3.7	4	5	3	4	2.8	2.8
Hamburg	3.7	4	4	3	4	3.3	4.1
Berlin	3.8	4	4	4	4	4.2	2.9
Dresden	4.2	4	7	2	6	4.2	2.1
Copenhagen	4.5	8	4	2	7	2.7	1.6
London	4.7	8	6	4	.5	2.2	1.3

Table 2 shows 15 other European cities which in 1909 and 1910 did not reach double figures in typhoid death rates per 100,000 population. These 15 cities represent a total population of over 9 millions. The average rate for the total population was only 5.3 in 1909 and 4.5 in 1910.

TABLE 2.—*Annual death rates from typhoid fever per 100,000 population in 15 other European cities.*

City.	1909	1910
Frankfort	1.6	0.9
Antwerp	1.0	2.3
Bristol	2.8	2.1
Nuremberg	2.6	
Birmingham	6.0	3.9
Belfast	5.2	3.9
Lyon	5.8	4.4
Leeds	7.2	3.8
Liverpool	8.4	3.9
Sheffield	9.4	3.0
Rotterdam	6.4	6.3
Amsterdam	3.6	6.7
Paris	8.4	5.6
Bradford	4.8	9.6
Leipzig	8.3	7.5
Total average rate	5.3	4.5

Table 3 shows the remaining eight cities in northern Europe with populations in excess of 300,000. These eight cities have a population of about 7½ millions. Their total average rate for 1909 was 13.9, and for 1910, 15.6. These rates would be considered low in America, but the European officials consider the persistence of such rates to be a reflection.

Table 3.—*Annual death rates from typhoid fever per 100,000 population in 8 other European cities.*

City.	1909	1910
Glasgow	12.5	6.4
Budapest	9.4	13.6
Brussels	7.4	16.1
Dublin	15.7	12.2
Manchester	13.9	10.3
Moscow	13.8	15.0
Warsaw	13.5	17.4
St. Petersburg	25.2	33.7
Total average	13.9	15.6

To recapitulate, in northern Europe the 33 principal cities, with an aggregate population of 31,500,000, had an average typhoid death rate per 100,000 population of 6.5 in 1909 and 1910. This includes such notorious typhoid centers as St. Petersburg, which had a rate of 33.7 in 1910. The rate in St. Petersburg is considered to be due to the water supply, which is partly filtered and partly raw Neva water.

It is clear that in cities which have had safe water supplies for a period of years the rate should not be above 5 per 100,000 unless some unusual condition exists, such as poor control of milk or lack of control over patients and carriers. Now let us compare typhoid-fever rates in American cities.

Table 4 shows our honor roll for 1909 and 1910. These are the typhoid-fever death rates among the 50 cities in the United States with more than 100,000 inhabitants. One city, Bridgeport, Conn., has a rate below 5. Three cities—Paterson, N. J., Cincinnati, Ohio, and Cambridge, Mass.—have rates below 10 per 100,000. Twenty-two other cities have rates of from 11 to 20 deaths per 100,000, and the remaining 24 cities have rates of from 20 to 86.

Table 4.—*Annual death rates from typhoid fever per 100,000 population in 50 cities of the United States having more than 100,000 inhabitants.*

City.	1909	1910
Birmingham, Ala	59.7	49.5
Los Angeles, Cal	16.1	14.2
Oakland, Cal	11.2	16.6
San Francisco, Cal	13.9	15.5
Denver, Colo	24.1	27.5
Bridgeport, Conn	9.0	4.9
New Haven, Conn	20.5	17.9
Washington, D. C.	34.8	23.2
Atlanta, Ga	50.6	50.1
Chicago, Ill	12.6	13.7
Indianapolis, Ind	22.3	28.5
Louisville, Ky	45.0	31.7
New Orleans, La	28.4	31.5
Baltimore, Md	24.9	42.0
Boston, Mass	13.8	11.3
Cambridge, Mass	7.7	9.5
Fall River, Mass	21.3	15.0

TABLE 4.—*Annual death rate from typhoid fever per 100,000 population in 50 cities of the United States having more than 100,000 inhabitants*—Continued.

City.	1909	1910
Lowell, Mass	10.5	19.7
Worcester, Mass	8.4	13.7
Detroit, Mich	20.5	22.0
Grand Rapids Mich	17.2	24.3
Minneapolis, Minn	21.0	58.7
St. Paul, Minn	18.9	19.5
Kansas City, Mo	29.3	54.4
St. Louis, Mo	16.2	14.9
Omaha, Nebr	36.8	36.7
Jersey City, N. J	8.8	11.5
Newark, N. J	11.9	12.1
Paterson, N. J	9.7	7.1
Albany, N. Y	19.0	14.0
Buffalo, N. Y	23.8	20.4
New York, N. Y	12.1	11.6
Rochester, N. Y	9.4	12.7
Syracuse, N. Y	11.2	28.2
Cincinnati, Ohio	13.3	8.8
Cleveland, Ohio	13.3	17.9
Columbus, Ohio	19.6	18.1
Dayton, Ohio	26.9	21.4
Toledo, Ohio	41.7	37.2
Portland, Oreg	22.0	22.4
Philadelphia, Pa	22.3	17.5
Pittsburgh, Pa	24.6	27.3
Scranton, Pa	16.4	16.9
Providence, R. I	11.4	17.9
Memphis, Tenn	48.8	27.4
Nashville, Tenn	52.0	45.9
Richmond, Va	24.1	21.9
Seattle, Wash	23.8	14.2
Spokane, Wash	43.2	45.4
Milwaukee, Wis	21.4	45.7

These 50 registration cities in the United States have an aggregate population of over 20,000,000. The aggregate typhoid death rate in these cities for 1910 was 25 per 100,000 inhabitants.

Unit of comparison.	Aggregate population.	Deaths per 100,000 from typhoid fever, 1910.
33 principal European cities in Russia, Sweden, Norway, Austria-Hungary, Germany, Denmark, France, Belgium, Holland, England, Scotland, and Ireland	31,500,000	6.5
50 American cities of 100,000 inhabitants or over	20,250,000	25.0
Excess of deaths from typhoid fever in American cities		18.5

So that on an average in every 100,000 population we had, compared with European results, 18.5 deaths and at least 180 cases of typhoid fever which should never have occurred. A conservative estimate for 1910 will place the deaths from typhoid fever above 25,000. When we consider that the smaller cities in America have in general higher rates than the larger, that the rural typhoid is high and in many sections higher than the urban, that in the sections not included in the registration area sanitary conditions are probably worse and typhoid fever rates higher than within the area, we are forced to conclude that a general rate of 25 is probably below the actual deaths from typhoid fever per 100,000 population in the entire United States.

The excess of 18 deaths per 100,000 in the urban population alone shows that we have had in the 50 cities mentioned above, at least, 3,600 deaths and probably 36,000 cases of typhoid fever which were preventable and should never have occurred. For the whole United States the number of cases for each year preventable by methods within our grasp would probably reach 175,000, and the deaths so avoided would total 16,200. In 1909 there were more cases of typhoid fever in the United States than there were cases of plague in India in spite of the fact that India's population is two and one-half times that of the United States.

From January, 1907, to October, 1911, there occurred in Russia 283,684 cases of Asiatic cholera. This included the appalling epidemic of 1910. According to a conservative estimate there occurred in the United States during the same period one million and a quarter cases of typhoid fever, or more than 4 cases of typhoid fever in the United States for every case of cholera in Russia. We heard a great deal of the terrible ravages of cholera in Italy in 1910–11; yet in these two years there occurred in Italy about 16,000 cases of cholera, with about 6,000 deaths, and in the United States in the same period we had more than a half million cases of typhoid fever and 50,000 deaths.

We are accustomed to speak of certain countries as pest ridden, and a residence in them or even a brief visit is considered with apprehension. But do we consider the prevalence of typhoid fever in our own country with sufficient seriousness? The annual 25,000 deaths from typhoid fever do not represent our total loss. At a conservative estimate they are accompanied by a quarter of a million of cases of the disease each year.

These cases represent an average illness for each individual of four weeks and probably six or eight weeks enforced abstinence from any gainful occupation. The economic loss is appalling, and, computing the value of the lives lost to the community, the cost of medical attendance and hospital care, the loss of earning capacity for many weeks, the decreased earning capacity and impaired efficiency due to sequelæ, would reach a sum of not less than $100,000,000 annually.

To understand fully the menace of typhoid fever, one must remember that it can not be prevented by ordinary personal cleanliness as typhus fever may be prevented, and is not confined to the poor and dirty, but reaches all classes.

It is not something we have in childhood and consign to history, as scarlet fever or measles, but a disease which attacks the most robust adult individuals during the period of their greatest activity and their greatest economic value to the community. Typhoid fever is a disease against which the individual is helpless,[1] and protection of the individual can be effected only by sanitary control of the entire food and drink supply and the sanitary disposal of human excreta.

Time will not permit the discussion of the whole problem of typhoid-fever transmission, and I shall confine myself to the water-borne typhoid solely. This is done with a full appreciation of the great importance of the other factors in typhoid transmission, viz, milk, control of patients and carriers, contact, flies, and rural typhoid.

No single measure in reducing typhoid fever on a large scale approaches the effect of substituting a safe for a polluted water supply. As an instance of this wholesale saving of human life, the reduction of typhoid fever in Pittsburgh may be cited. Since the installation of the Pittsburgh plants there has been an annual saving in the city of 400 lives from typhoid fever alone. Installation of safe water supplies in America has not always produced brilliant results, but the failure to reach the low figures attained by the Germans is due principally to three things: First, failure to supply pure water to all; second, imported cases, usually from communities which are typhoid centers; third, existence of insanitary conditions, such as contaminated wells, outdoor privies, and lack of control over milk and excreta.

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[1] Vaccination against typhoid protects the individual in the great majority of cases. As a general means of protection of the civilian population, it is not likely to prove practicable, however, although of immense advantage in protecting military units against typhoid whe [illegible] ccination is feasible.

As an instance of high rate due to failure to furnish filtered water to all the people, the experience of Pittsburgh is interesting. The filter plant in Pittsburgh was first put in operation November, 1907. But a small portion of filtered water was supplied at first and this was mixed with the unfiltered supply. The amount of water filtered was increased until October, 1908, when the supply of that part of the city between the rivers—about three-fifths of the total population—was filtered.

The south side, a little less than one-fifth of the entire population, was supplied with filtered water in March, 1909. The former city of Allegheny, recently annexed, is not yet supplied with filtered water. This part of the city includes a population of about one-fourth of the entire city.

There was a remarkable decrease of typhoid fever in Pittsburgh progressively coincident with the increase of area supplied with filtered water. In spite of all this remarkable reduction two points stand out prominently: First, the rate is still high (1910), and, second, the seasonal distribution suggests water as a prime factor. Explanation of these two points is furnished by a study of the cases as shown in Table 5, from which it is clear that water was responsible for the high rate, and that this high rate was due entirely to the abnormal rate in wards 21 to 27, inclusive.

TABLE 5.—*Typhoid-fever deaths by wards, Pittsburgh, Pa., 1910.*[1]

	Population.	Typhoid deaths.		Population.	Typhoid deaths.
Ward 1	11,623	3	Ward 15	20,141	3
Ward 2	14,386	1	Ward 16	20,833	1
Ward 3	26,462	3	Ward 17	25,213	3
Ward 4	25,055	11	Ward 18	17,994	1
Ward 5	24,485	2	Ward 19	23,482	3
Ward 6	26,261	3	Ward 20	18,648	2
Ward 7	13,263	1	Ward 21	22,806	11
Ward 8	18,204	0	Ward 22	15,716	9
Ward 9	17,795	6	Ward 23	21,799	13
Ward 10	21,206	3	Ward 24	17,354	6
Ward 11	17,066	2	Ward 25	16,037	5
Ward 12	22,342	2	Ward 26	15,291	6
Ward 13	24,080	2	Ward 27	23,580	12
Ward 14	13,074	1			

[1] These figures were furnished by the health department of the city of Pittsburgh.

Total population of Pittsburgh	[illegible]
Total deaths typhoid fever	116
Death rate per 100,000, entire city	[illegible]
Death rate per 100,000, wards 1 to 20	[illegible]
Death rate per 100,000, wards 21 to 27	[illegible]

Wards 1 to 20 were supplied with filtered water. The aggregate population of these 20 wards was 401,622. The typhoid-fever death rate per 100,000 in 1910 was 13.4. Wards 21 to 27 comprise the old city of Allegheny and have a total population of 132,283. This section received unfiltered water. The typhoid-fever death rate per 100,000 in this section in 1910 was 46.9.

The absolute necessity of a safe water supply—and by "safe" a supply is meant which is safe 365 days in the year—in seeking to rid ourselves of the odium of water-borne typhoid, is obvious. The installation of such a supply, however, has another powerful effect upon the typhoid-fever rate. The existence of a pure public water supply makes possible the elimination of the dangerous shallow well and filthy yard privy. With a contaminated or unsightly public supply a vigorous campaign against the insanitary privy and contaminated well is impossible. The householder is as a rule unwilling to close his well and connect his premises with the public water mains unless the city water appears to be better than that obtained from the well. When water connections have once been made, water closets or other suitable toilet facilities are usually installed as a matter of convenience and the yard privy is no longer needed and its use, therefore, is discontinued.

The conditions which make disaster possible where the source of public water supply is polluted are two, viz:

1. Failure to purify.
2. Inefficiency of the purification.

The failure to install a purification plant is usually due to an undue confidence in a water supply which is safe "most of the time." It is difficult for some officials to understand, without a severe lesson, that it is not sufficient to have a water supply that is safe for 360 or 361 days in the year, and to these officials it seems scarcely justifiable to require expensive purification for the sake of the four or five days in the year during which, due to weather conditions, pollution may take place. Such a supply, with a favorably placed intake, may escape pollution for more than a year. There was no evidence of serious pollution of the water supply of the city of Erie during the year 1909, yet the appalling disaster of January and February, 1911, showed that pollution could take place under certain weather conditions.

There is also too much confidence placed in unfiltered surface supplies from inhabited watersheds. Even where there is alleged control of the watershed and ample storage, pollution may occur. In regard to unfiltered surface supplies the need of bacteriologic control is very evident. Dangerous pollution may be present only for a few days or for a few hours. This is most likely to be disastrous in time of drought or low water. At such times the diluting effect of the inflow and the purifying effect of storage are both reduced to the minimum. The bacterial count per cubic centimeter is valuable, but the quantitative estimation of B. coli is of far greater importance. A low count does not necessarily imply a safe water, but a low count, coupled with absence of B. coli, may be considered an index of safety.

The typhoid epidemic in Baltimore [1] in 1910 was coincident with a prolonged drought. The run-off from the watershed of the Gunpowder River was reduced to the minimum. The sewage pollution was thus concentrated and gross pollution was evident upon bacteriologic examination. B. coli was frequently found in 0.1 of a cubic centimeter, and sometimes in 0.01 cubic centimeter samples. When the run-off increased, affording greater dilution and increased storage, the water returned to normal and the typhoid fever dropped to a minimum.

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[1] Ford, Wm. W., and Watson, E. M. Bulletin Hospital, October, 1911.

In Europe surface supplies are almost invariably filtered, and eventually such supplies in America will be treated or filtered.

Poor filter efficiency is often responsible for disaster in the shape of typhoid outbreaks and may be due to several causes. The slow sand type may give poor filter efficiency when sufficient extra units are lacking, necessitating excessive rates and placing of "green" filters in service. Excessive rates, too little coagulant, insufficient sedimentation capacity, and insufficient storage are common operating and structural faults of the mechanical type. Sometimes a properly constructed plant is struggling with a raw water which has a high bacterial content and even with fair filter efficiency yields an unsafe effluent. Probably the greatest single cause of a poor effluent from filter plants is inefficient operation by unskilled men. It is absolutely essential for good results that bacteriologic examination, including B. coli estimation, be made at least once daily, and in slow sand plants from each unit separately.

The man in charge must be able to do this. In mechanical filter plants or with hypochlorite plants he must also have the necessary skill to adjust his chemicals with nicety according to the changes in the raw water. With such a man in charge of a properly constructed plant a safe effluent is assured at all times. When struggling with a bad raw water, he will use hypochlorite as an adjuvant with good results. He will study the peculiarities and fluctuations of the constituents of the raw water and adjust his treatment accordingly.

The most serious defect in sanitary control of our water supplies is the lack of proper daily bacteriologic examination of the water and quantitative estimation of the B. coli content. In some of the lake cities there is proper daily bacteriologic examination of the water supply, but in many of them there is either an imperfect examination or none at all. One city with a slow sand filter plant of three units and a consumption equal to the safe filter capacity of the beds operates these without rest, putting the units in service "green" and with an occasional examination of the water once or twice a month. As a result this city in 1910 had a typhoid-fever death rate of over 300 per 100,000. One large city using unfiltered lake water is so sure that the water is pure that examination is made only occasionally. One of the largest lake cities using an unfiltered supply exposed to sewage pollution makes a bacterial count daily, but restricts its effort to detect sewage pollution to the antiquated and indefinite test of inoculating a guinea pig occasionally with a small portion of a broth culture.

It is the plain duty of a municipality to provide its citizens with pure water. It is not sufficient to warn against a supply as dangerous and advise its use only for fire, lawn sprinkling, or factory purposes, as at Flint or Saginaw. There are many people in every city who are like children and must be protected even against themselves. The lazy, poor, and ignorant will drink and use the polluted public supply from a convenient tap rather than travel a considerable distance to a pump or buy bottled water which they can ill afford. Neither is it sufficient to have a safe supply for 360 days out of the year, warning the people to boil the water on the other 5 days. The notice to boil the water is based on bacteriologic findings which are 24 hours late. The notice is often ineffective, and by some ignored.

The factors affecting sewage pollution of a water supply and which determine the relative danger to be anticipated from such pollution are: The amount of polluting material, the presence of pathogenic organisms, the time of transit from the source of pollution to the waterworks intake, and the amount of water available for dilution.

Provided that the amount of polluting material is considerable, that typhoid fever is prevalent on the watershed, and that the time of transit is within the bounds of time deemed necessary for the natural death of bacteria, pollution of the intake will take place. The last factor, the amount of dilution, will determine the intensity of the pollution. If the polluting material is great in amount or if a swift current cuts down the time of transit, prevents sedimentation, and retards dilution, then gross pollution results.

With a dilute pollution one need not expect a great explosive outbreak, but many cases of typhoid may result, especially following floods and rains. Often in the absence of explosive outbreaks in the winter or spring months it will be demonstrable that too many deaths from typhoid fever occur in the first half of the year. On the other hand, it is reasonable to suppose that the dilute infection may be responsible for many scattered cases which can not be traced to water. These cases may not appear in sufficient numbers in any particular month to be remarkable or they may be obscured by occurring in the months when typhoid fever is accepted as an inevitable visitation.

Water may be responsible for many cases of typhoid when it is impossible to prove the case against it. We are able to fix the guilt on the water supply only in massive outbreaks of explosive character, but smaller doses of pollution can be responsible for smaller outbreaks of many cases spaced over a long period without any hope of proving this causation.

When cities have a public water supply polluted by sewage, or admittedly exposed to pollution, the obvious thing to do is to filter or treat the water and protect the public from infection. Unfortunately there is a deplorable tendency to abuse the town above and to spend years in an effort to compel (usually without legal process) sewage treatment in the offending municipality. In other cities where the pollution is due to their own sewage, years are lost in the discussion of methods of sewage purification, while the dangerous untreated and unfiltered water is furnished to the citizens.

In regard to sewage disposal it must be remembered that no general rule can be formulated which will cover with justice every case. Each municipality becomes a separate problem and local conditions must be studied. Remedies for correction of improper sewage disposal will differ according to the local conditions. Even if all the sewage from our large cities and towns was prevented from reaching the lakes and rivers, it would be impossible to prevent pollution from reaching these waterways in times of storm and flood, so that sewage disposal even carried to the degree of sterilizing the effluent does not give us a substitute for water filtration or treatment. While it is impracticable to prevent pollution of the Great Lakes, it is possible and imperatively necessary that such pollution be controlled and kept within safe bounds. It would be very foolish from an economic standpoint not to avail ourselves of the cheapest and simplest method of sewage disposal, viz, disposal by dilution, provided that this may be done without danger to the water supplies of other communities and without putting an unreasonable burden and excessive responsibility upon the filter plants of those communities. The point to which this method of disposal may be permitted must be determined by local conditions. There is a crying need in the United States for official standards of drinking water.

In view of the fact that bacterial counts may be low in a comparatively dangerous water, and sometimes a high count might be found in water containing no evidence of fecal bacteria, the colon estimation is of primary importance in judging the character of a raw water. There should be standards for the permissible colon content of raw water. These should be fixed after careful study of the ability of filter plants and other processes to remove colon and other fecal bacteria. These standards for raw water and for filtered or treated water would enable us to strike a balance between sewage purification and treatment of water, and to determine the degree of sewage purification necessary to assure a raw water of reasonable quality at a given point. These standards would also mark the extent to which disposal of sewage by simple dilution might be permitted with safety. As a general proposition, it is cheaper to treat drinking water than to purify sewage. The economic side of the question must be considered. How far is it necessary to carry the treatment of sewage as an adjunct to water purifications? The balance between these two powerful agencies in the protection of the public health must be struck, and, as intimated above, this must be done separately for each local problem and no definite rule for the relation of these agencies can be made. These should fix the permissible number of bacteria in both raw and filtered or treated water. I do not care to attempt to fix such a standard, but, in my opinion, the bacterial count in raw water from the Great Lakes should not exceed 5,000 per cubic centimeter at any time and should not average above 1,000. Filtered or treated water should not contain more than 100 organisms per cubic centimeter at any time and the average should be 20 or under.

These sewage problems are often difficult of solution, present great engineering difficulties, and necessitate the expenditure of large sums of money. This means that much time must elapse before the proper method is selected and a great deal more time will pass before the works are completed. In the end though necessary, the sewage purification does not remove all pollution, and treatment of the water supply is still a necessity after the sewage-disposal plant is in operation. On the other hand, the dangerous public water supply is a simpler proposition. Immediate protection can be afforded by treating with "hypochlorite," using a temporary plant until the method to be finally adopted is decided upon. In a word, there is every excuse for deliberation and reasonable delay in settling the sewage-disposal problems, while there is no excuse whatever for any municipal government to delay in applying the remedy which protects immediately, viz, treatment or filtration of the public water supply. Sewage-disposal measures for improving the quality of the raw water, for preventing its deterioration, or for other reasons may be undertaken when necessary and feasible.

SUMMARY.

1. In the prevention of typhoid fever there is a necessity for safe water supplies for 365 days in the year.
2. Unfiltered surface supplies may be exposed to a dangerous pollution for a few days or even for a few hours only.
3. Supplies derived by impounding surface waters and which depend upon storage alone to nullify the pollution of an inhabited watershed may be very dangerous in periods of drought and low water. The proportion of pollution is relatively greater at such times and the time of storage is greatly reduced.
4. Purification, whether by storage, filtration, or chemical treatment, must be efficient at all times, and this can not be assured without daily bacteriologic control.
5. It is essential that a daily quantitative estimation of B. coli be made, as a low bacterial count does not necessarily mean a safe water without absence of B. coli.
6. There is a necessity for close supervision of municipal plants by the State to correct structural and operative defects and insure a safe water at all times.
7. Bacteriologic control and State supervision would insure cleaning when necessary and should prevent the putting in service of slow sand filters before the *Schmutzdecke* is ripe.
8. In order to control typhoid fever and eliminate water-borne typhoid it is not sufficient alone to have a purification plant. In addition the purification must be efficient and the purified water must be available in all parts of the city.
9. The danger of dual water supplies is apparent, especially if the polluted supply is easy of access and the safe supply difficult to reach or expensive.
10. In protecting the public health, purification of the public water supply is usually primary and sewage disposal secondary, but often a judicious adjustment of the two agencies is necessary especially for economic reasons. Sewage disposal will rarely if ever make a sewage-polluted water supply absolutely safe, but is often an aid and sometimes a necessity to furnishing a reasonably good raw water for the purification plant.

A "PUBLIC-HEALTH WEEK" IN BALTIMORE.

Under the auspicies of the Medical and Chirurgical Faculty of Maryland there was observed from February 19 to 26 a "public-health week," which included an exhibition and lectures daily on public-health subjects.

Several lectures were presented each evening to popular audiences assembled in the lecture room of the building of the above-mentioned faculty, and space was provided in the same building for housing the exhibit.

On request, the Public Health and Marine-Hospital Service sent exhibits, which included a number of models used in previous exhibits and certain charts and maps. The models were as follows:

1. Corner of rat-infested kitchen, with insanitary garbage barrel.
2. House and surroundings, showing rat infestation.

3. House and barn, showing antirat devices.
4. House screened against yellow fever.
5. California ground squirrels and their natural enemies (wolf, coyote, hawk, eagle, snake).
6. Quarantine machinery.
7. Models of privies, sanitary and insanitary, including a full-sized L. R. S. privy.

Other materials in the service exhibit were as follows:

1. Outline drawings showing the antiplague work in San Francisco, 1907–1909.
2. Drawings showing the work against yellow fever in New Orleans, 1905.
3. Colored drawings and halftone prints illustrating pellagra.
4. A large map of the United States, showing the field investigations of the service during 1911.
5. A "hookworm and privy chart," taken apart and with each leaf displayed.
6. Charts illustrating the prevalence of smallpox in the United States.
7. Charts showing the work of the Division of Pharmacology on drug standardization, etc.
8. Boards carrying copies of available service literature, firmly fastened.
9. Charts showing the work of the service on typhoid fever.
10. Colored drawings illustrating trachoma.
11. Chart illustrating recent researches on typhus fever.
12. Chart and specimens showing Hygienic Laboratory work on embalming fluids.
13. Companion maps showing the results of the cholera invasions of 1873 and 1911.

In addition to the above, there were miscellaneous photographs and colored drawings and prepared specimens illustrating the activities of the service in relation to the investigation of leprosy, plague, rabies, tuberculosis, animal parasites, etc.

Valuable exhibits were made by the health authorities of the State of Maryland and the city of Baltimore, all of the materials being arranged generally to demonstrate the causes of diseases, the symptoms produced thereby, the methods of transmission, and the measures necessary for their prevention.

The value to a community of the holding of a general exhibition on hygiene and sanitation was well exemplified, and the plan of observing a public health week as inaugurated by the Medical and Chirurgical Faculty of Maryland might well be adopted by the medical profession in other States and cities.

SALVARSAN IN FRAMBŒSIA TROPICA (YAWS).

Consul Franklin D. Hale at Trinidad, British West Indies, states that in a recent report made to the governor and legislative council by the surgeon general special mention was made of the use of salvarsan at the St. Augustine hospital where from January to October, 1911, 500 cases of frambœsia tropica were treated with salvarsan in doses of 9 grains for an adult as an intramuscular injection, with the following results: 498 cases, or $99\frac{6}{10}$ per cent were cured. Of these 409 cases, or 82 per cent were cured with one treatment; 75 cases required the second injection, while 14 had to be treated the third time. At the time of the submitting of the report there were only two stubborn cases, but these were subsequently reported as cured. There were only five relapses after the treatment, or 1 per cent, whereas before the use of salvarsan was commenced, the number of relapses after treatment was 12 or 14 per cent. No local gangrene, no nerve or ear complications, and no dimness of sight resulted from the use of the salvarsan.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

NEW YORK, N. Y.

MILK—PRODUCTION, CARE, AND SALE—WITH SPECIAL REFERENCE TO PASTEURIZATION.

Amendment to Sanitary Code.

SECTION 56a. All milk held, kept, offered for sale or sold and delivered in the city of New York shall be so held, kept, offered for sale or sold and delivered under either or any of the following grades or designations, and under no other, and in accordance with such rules and regulations as may be adopted by the board of health, namely:

Grade A (for infants and children).—1. Certified or guaranteed milk. 2. Inspected milk (raw). 3. Selected milk (pasteurized).

Grade B (for adults).—1. Selected milk (raw). 2. Pasteurized milk.

Grade C (for cooking and manufacturing purposes only).—Raw milk not conforming to the requirements for grade A and B. Condensed skimmed milk. Condensed or concentrated milk.

The provisions of this section shall not apply to buttermilk or to milk products commonly known as kumyss, matzoon, zoolak, dried milk or milk powder, or to other similar preparations, or to cream or modified milk.

SEC. 56c. No milk shall be held, kept, offered for sale or sold and delivered in the city of New York under either or any of the designations known as grade A, B, or C, or any of the subdivisions thereof, or any of the designations "condensed skimmed milk," "condensed or concentrated milk," or "modified milk," without special permit in writing therefor from the board of health, subject to the conditions thereof.

The special permit shall specify the grade or subdivision thereof or the special designation of milk which the holder of such permit is authorized to keep for sale or offer for sale, as aforesaid.

None of the provisions thereof, however, shall apply to condensed milk when contained in hermetically sealed cans.

[Amendment to Sanitary Code adopted Jan. 4, 1912.]

Regulations.

GRADE A (FOR INFANTS AND CHILDREN).

GUARANTEED MILK.

Definition.—Guaranteed milk is milk produced at farms holding permits therefor from the board of health and produced and handled in accordance with the following minimum requirements, rules, and regulations:

Requirements, rules, and regulations.—1. Only such cows shall be admitted to the herd as have not reacted to a diagnostic injection of tuberculin.

2. All cows shall be annually tested with tuberculin, and all reacting animals shall be excluded from the herd.

3. No milk from reacting animals shall be shipped to the city of New York for any purpose whatever.

4. The milk shall not contain more than 30,000 bacteria per cubic centimeter when delivered to the consumer or at any time prior to such delivery.

5. The milk shall be delivered to the consumer only in sealed bottles which have been sealed at the dairy and shall be labeled with the day of the week upon which the earliest milking, of which the contents of the bottle form part, has been drawn.

6. The milk shall be delivered to the consumer within 30 hours of the time at which it was drawn.

CERTIFIED MILK.

Definition.—Certified milk is milk certified by a milk commission appointed by the Medical Society of the County of New York or the Medical Society of the County of Kings as being produced under the supervision and in conformity with the requirements of that commission as laid down for certified milk and sold under a permit therefor issued by the board of health.

No milk shall be held, kept, offered for sale, or sold and delivered as certified milk in the city of New York which is produced under requirements less than those for "guaranteed milk."

INSPECTED MILK (RAW).

Definition.—Inspected milk (raw) is milk produced at farms holding permits therefor from the board of health and produced and handled in accordance with the following minimum requirements, rules, and regulations:

Requirements, rules, and regulations.—1. Only such cows shall be admitted to the herd as have not reacted to a diagnostic injection of tuberculin.

2. All cows shall be tested annually with tuberculin, and all reacting animals shall be excluded from the herd.

3. No milk from reacting animals shall be shipped to the city of New York for any purpose whatsoever.

4. The farms at which the milk is produced must obtain at least 75 points in an official score of the department of health. These 75 points shall be made up as follows: A minimum of 32 points for equipment and 43 points for method.

5. The milk shall not contain more than an average of 60,000 bacteria per cubic centimeter when delivered to the consumer or at any time prior thereto.

6. Unless otherwise specified in the permit, the milk shall be delivered to the consumer only in bottles.

SELECTED MILK (PASTEURIZED).

Definition.—Selected milk (pasteurized) is milk produced at farms holding permits therefor from the board of health and produced and handled in accordance with the following requirements, rules, and regulations:

Requirements, rules, and regulations.—1. The farms at which the milk is produced must obtain at least 60 points in an official score of the department of health. Of these 60 points, a minimum of 20 points shall be required for equipment and a minimum of 40 points for method.

2. All milk of this grade shall be pasteurized, and said pasteurization shall be carried on under a special permit issued therefor by the board of health, in addition to the permit for "selected milk (pasteurized)."

3. The milk shall not contain more than an average of 50,000 bacteria per cubic centimeter when delivered to the consumer or at any time after pasteurization and prior to such delivery.

4. Unless otherwise specified in the permit, the milk shall be delivered to the consumer only in bottles.

5. All containers in which pasteurized milk is delivered to the consumer shall be plainly labeled "pasteurized." Labels must also bear the date and hour when pasteurization was completed, the place where pasteurization was performed, and the name of the person, firm, or corporation performing the pasteurization.

6. The milk must be delivered to the consumers within 30 hours after the completion of the process of pasteurization.

7. No milk shall be pasteurized more than once.

8. No milk containing in excess of 200,000 bacteria per cubic centimeter shall be pasteurized.

General regulations for grade A.—1. The caps of all bottles containing milk of grade A shall be white, and shall contain the words "Grade A" in black letters, in large type.

2. If cans are used for the delivery of milk of grade A, the said cans shall have affixed to them white tags with the words "Grade A" printed thereon in black letters, in large type, together with the designation "Inspected milk (raw)" or "Selected milk (pasteurized)," as the quality of the contents may require.

GRADE B (FOR ADULTS).

SELECTED MILK (RAW).

Definition.—Selected milk (raw) is milk produced at farms holding permits therefor from the board of health, and produced and handled in accordance with the following minimum requirements, rules, and regulations:

Requirements, rules, and regulations.—1. Only such cows shall be admitted to the herd as have been physically examined by a regularly qualified veterinarian and declared by him to be healthy and free from tuberculosis in so far as a physical examination may determine that fact.

2. The farms at which the milk is produced must obtain at least 68 points in an official score of the department of health. These 68 points shall be made up as follows: A minimum of 25 points for equipment, and a minimum of 43 points for method.

3. The milk shall not contain an excessive number of bacteria when delivered to the consumer, or at any time prior thereto.

PASTEURIZED MILK.

Definition.—Pasteurized milk (grade B) is milk produced under a permit issued therefor by the board of health, and produced and handled in accordance with the following minimum requirements, rules, and regulations and in further accordance with the special rules and regulations relating to the pasteurization of milk.

Requirements, rules, and regulations.—1. The milk after pasteurization must be at once cooled and placed in sterilized containers, and the containers immediately closed.

2. All containers in which pasteurized milk is delivered to the consumer shall be plainly labeled "pasteurized." Labels must also bear the date and hour when the pasteurization was completed, the place where pasteurization was performed, and the name of the person, firm, or corporation performing the pasteurization.

3. The milk must be delivered to the consumer within 36 hours after the completion of the process of pasteurization.

4. No milk shall be pasteurized more than once.

5. No milk containing an excessive number of bacteria shall be pasteurized.

General regulations for grade B.—1. Caps of bottles containing milk of grade B shall be white and marked "Grade B" in bright green letters, in large type.

2. The necks and shoulders of cans containing milk of grade B shall be painted bright green, and a metal tag shall be affixed to each can with the words "Grade B" in large type, and the words of the subdivision to which the quality of the milk in the said can conforms.

GRADE C (FOR COOKING AND MANUFACTURING PURPOSES ONLY).

Definition.—Raw milk not conforming to the requirements of any of the subdivisions of grade A or grade B.

Requirements, rules, and regulations.—1. Milk of this grade shall not be sold at retail from stores.

2. Milk of this grade may be sold to restaurants, hotels, and manufacturing plants only.

3. Cans containing milk of grade C shall be painted red on necks and shoulders, and shall be provided with a metal tag containing the words "Grade C" in large type. All creameries handling milk of different grades will be required to demonstrate to the department of health that they are capable of keeping the grades separate, and must keep records satisfactory to the department of health concerning the amount of milk of each grade handled each day.

CONDENSED OR CONCENTRATED MILK.

Definition.—This is milk of any grade or subdivision thereof from which any part of the water has been removed, or from which any part of the water has been removed and to which sugar had been added.

Rules and regulations.—Milk of this designation shall be sold only under a permit issued therefor.

GENERAL RULES AND REGULATIONS.

1. *Permits.*—A permit for the sale of milk or cream, of any grade or designation, may be granted only after an application has been made in writing on the special blank provided for the purpose.

2. A permit for the sale of milk, of any grade or designation, or of cream, may be granted only after the premises where it is proposed to care for and handle such milk shall have been rendered clean and sanitary.

3. Every permit for the sale of milk or cream from places other than wagons shall expire one year from the date of issue.

4. No wagon shall be used for the transportation of milk, condensed milk, or cream without a permit from the board of health. Every such permit shall expire on the last day of December of the year in which it is granted. A wagon permit for the sale or transportation of milk, condensed milk, or cream shall be conspicuously displayed on the outside of the wagon so that it may be readily seen from the street.

5. Every permit for the sale of milk, of any grade or designation, in a store shall be so conspicuously placed that it may be readily seen at all times.

6. All stores selling or keeping for sale milk, condensed milk, or cream will be frequently inspected and scored by a system adopted by the department of health, and the revocation of the permit of any store may ensue if the score is found repeatedly below the required standard.

7. The revocation of a permit may ensue for violation of any of the rates and regulations of the department of health.

8. The revocation of a permit may ensue upon repeated conviction of the holder thereof of the violation of any section of the Sanitary Code relating to the adulteration of milk of any grade or designation.

1. *Sanitary requirements.*—Milk, condensed milk, or cream shall not be kept for sale nor stored in any stable or room used for sleeping or domestic purposes, or in any room if in communication with such stable or room, or with water-closet apartments, except when such water-closet apartments are inclosed by a vestibule and are properly ventilated to the external air.

2. Milk, condensed milk, or cream shall not be sold or stored in any room which is dark, poorly ventilated, or dirty, or in which rubbish or useless material is allowed to accumulate, or in which there are offensive odors.

3. The vessels which contain milk, condensed milk, or cream, while on sale, must be so protected by suitable covers and so placed in the store that the milk, condensed milk, or cream will not become contaminated by dust, dirt, or flies.

4. Cans containing milk, condensed milk, or cream shall not be allowed to stand on the sidewalk or outside of the store door.

5. Milk, condensed milk, or cream must not be transferred from cans to bottles or other vessels on the streets, at ferries, or at railroad depots, except when transferred to the vessel of the purchaser at the time of delivery.

6. Cans in which milk, condensed milk, or cream is kept for sale, shall be kept either in a milk tub, properly iced, or in a clean ice box or refrigerator in which these or similar articles of food are stored.

7. All containers in which milk, condensed milk, or cream is handled, transported, or sold, must be thoroughly cleaned and sterilized before filling, but such cleaning shall not be done nor shall such containers be filled in any stable or in any room used for sleeping or domestic purposes, or in any room having connection with such stable or rooms, or with water-closet apartments, except when such water-closet apartments are inclosed by a vestibule and are properly ventilated to the external air.

8. All dippers, measures, or other utensils used in the handling of milk, condensed milk, or cream must be kept clean while in use, and must be thoroughly cleaned with hot water and soapsuds directly after each day's use.

9. The ice box or ice tub in which milk, condensed milk, or cream is kept must be maintained in a thoroughly clean condition and must be scrubbed at such times as may be directed by the department of health.

10. The overflow pipe from the ice box in which milk, condensed milk, or cream is kept must not be directly connected with the drainpipe or sewer, but must discharge into a properly trapped, sewer-connected, water-supplied open sink.

11. No person having a contagious disease, or caring for or coming in contact with any person having a contagious disease, shall handle milk.

Labeling.—Each container or receptacle used for bringing milk or cream into the city of New York, from which the said milk or cream is sold directly to the consumer, shall bear a tag stating, if shipped from a creamery, the location of the said creamery and the date of shipment; if shipped directly from a dairy, the location of the said dairy and the date of shipment.

As soon as the contents of such container or receptacle are sold, or before the said container is returned or otherwise disposed of, or leaves the possession of the dealer, the tag thereon shall be removed and kept on file in the store where such milk or cream has been sold for a period of two months thereafter for inspection by the department of health.

Every wholesale dealer in the city of New York shall keep a record in his main office in the said city which shall show the place or places from which milk or cream delivered by him daily to retail stores in the city of New York has been received, and the said record shall be kept for a period of two months for inspection by the department of health and shall be readily accessible to the inspectors of the said department.

1. *Pasteurization.*—Milk which has been subjected to the action of heat commonly known as "pasteurization" shall not be held, kept, offered for sale, or sold and delivered in the city of New York unless the receptacle in which the same is contained is plainly labeled "pasteurized."

2. Only such milk or cream shall be regarded as pasteurized as has been subjected to a process in which the temperature and exposure conform to one of the following:
No less than 158° F. for at least 3 minutes.
No less than 155° F. for at least 5 minutes.
No less than 152° F. for at least 10 minutes.
No less than 148° F. for at least 15 minutes.
No less than 145° F. for at least 18 minutes.
No less than 140° F. for at least 20 minutes.

3. The said term "pasteurized" shall only be used in connection with the milk classified as "grade A, selected milk (pasteurized)" and "grade B, pasteurized," or cream obtained from such milk.

4. Milk or cream which has been heated in any degree will not be permitted to be sold in New York City unless the heating conforms with the requirements of the department of health for the pasteurization of milk or cream.

5. Applications for permits to pasteurize milk or cream will not be received until all forms of apparatus connected with the said pasteurization have been tested and the processes approved by the board of health.

[Regulations, department of health, adopted Jan. 4, 1912.]

The following is taken from the discussion of the considerations which influenced the department of health in making the above amendments to the sanitary code and milk regulations as it appeared in the January, 1912, bulletin of the New York City department of health:

Why Pasteurization Is Necessary.

In any discussion of pasteurization, as used in connection with modern and approved methods of municipal control, it is hardly necessary to state that the term refers to thorough and efficient heating, under careful supervision by the public health authorities, in accordance with regulations based on the results of scientific research as to the temperatures and duration of exposure thereto, necessary to destroy disease-producing bacteria.

During the past three years the course of events has furnished striking proof of the need of such pasteurization of all except special grades of milk. By means of a well-organized system of inspection, based on the issue of permits to ship and sell milk in New York City, the department is in a position to trace the history and source of all milk brought into the city, and is thereby enabled to undertake satisfactory detective work in determining the causes of given outbreaks of infectious diseases due to contaminated milk. Studies carried out in this manner have proved beyond reasonable doubt that since August, 1909, at least two extensive outbreaks of typhoid fever in the city were caused by the infection of particular milk supplies from chronic bacillus carriers. In the case of one outbreak traced to Camden, N. Y., the infection came from a dairyman who had had typhoid fever in Wisconsin in 1863. The subsequent history of his family shows that the disease had attacked nearly every member of his household, including farm laborers who had worked with him from time to time. Bacteriological examinations in 1909, 46 years after he had had the disease, resulted in the development of almost pure cultures of typhoid-fever bacilli.

Danger from "Typhoid Carriers."

The necessity of extraordinary precautions on the part of a municipality to guard its milk against such danger is self-evident. Typhoid-bacillus carriers are not the rare phenomena they were formerly supposed to be, and the presence of even one of these unfortunate persons in the great army of workers engaged in producing and handling the milk supply of a large city is a source of danger which is the more threatening and insidious because it is so impossible to detect by ordinary means. To insure the safety of milk from such infection would require repeated bacteriological examinations of every individual connected with the production, transportation, and marketing of the milk. There are, perhaps, 300,000 persons who stand in this relation to the milk supply of New York City, and a recent estimate of the relative frequency of bacillus carriers gives reason for the belief that there are at least 100 such individuals among this number. No matter how many inspectors of dairies, creameries, and stores the department might employ, no matter how perfectly organized the system of permits and information as to the source of milk, these forces alone can not tect the health of the city.

CEREBROSPINAL MENINGITIS.

TEXAS.

Surg. Guiteras reports the occurrence at Galveston of 13 cases of cerebrospinal meningitis with 3 deaths during the period from March 5 to 12, 1912.

Acting Asst. Surg. Fairbanks, at Brownsville, reports March 9 the presence of a case of cerebrospinal meningitis at Harlingen, Cameron County, Tex.

At Houston the health officer reports 21 cases with 9 deaths during the two weeks ended March 9, 1912.

At San Antonio the health officer reports the occurrence of 1 case during the week ended March 2, 1912.

OKLAHOMA.

From the time the first case was reported in December, 1911, to February 28, 1912, there have been reported cerebrospinal meningitis cases and deaths in the following counties of Oklahoma:[1]

County.	Cases.	Deaths.	County.	Cases.	Deaths.
Custer	2	1	Hughes	15	12
Kiowa	2		Jackson	1	1
Garvin	4	3	Stephens	1	
Bryan	50	20	Seminole	4	2
Carter	10	4	Garfield	4	3
Love	20	7	Beaver	1	
Marshall	24	7	Haskell	1	1
McLain	7	3	Le Flore	1	
Comanche	10	3	Washington	1	1
Johnston	22	7	Pottawatomie	5	1
McCurtain	18	10	Creek	3	
Murray	2	1	Woods	1	
Osage	11	5	Tulsa	2	2
Choctaw	6	4	Grant	1	
Pontotoc	25	10	Wagoner	2	1
Pawnee	3	1	Coal	1	
Harmon	3	2	Okmulgee	1	
Muskogee	6	3	McIntosh	7	5
Pushmataha	3	1			
Atoka	1		Total	282	121
Grady	1				

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,485 acres of land in Alameda County were covered with poison during the week ended March 2, 1912.

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[1] Bulletin of the Oklahoma State board of health March 1912.

During the same period 1,760 acres of land in San Joaquin County and 3,245 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected
California:					
Cities—					
Berkeley	Mar. 2, 1912	2	[1] 160	76	
Oakland	do	24	[2] 637	437	
San Francisco	do	11	[3] 1,637	1.200	
Counties—					
San Joaquin	do		[4] 77	77	
Washington:					
City—					
Seattle	do		993	948	

[1] Identified: Mus norvegicus, 79; Mus rattus, 1; Mus musculus, 80.
[2] Identified: Mus norvegicus, 482; Mus rattus, 2; Mus musculus, 152; Mus alexandrinus, 1.
[3] Identified: Mus norvegicus, 761; Mus rattus, 200; Mus musculus, 441; Mus alexandrinus, 235.
[4] Identified: Mus norvegicus, 76; Mus musculus, 1.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

SMALLPOX IN THE UNITED STATES—Continued.

REPORTS RECEIVED DURING WEEK ENDED MAR. 22, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Florida:				
Counties—				
Alachua	Feb. 25–Mar. 2	4		
De Soto	do	4		
Duval	do	34		
Madison	do	1		
Manatee	do	1		
Pasco	do	1		
Polk	do	1		
Putnam	do	17		
Volusia	do	5		
Total for State		68		
Illinois:				
Counties—				
Bond	Jan. 1–31	5		
Bureau	do	2		
Champaign	do	1		
Christian	do	3		
Clinton	do	1		
Cook	do	1		
Douglas	do	16		
Kane	do	9		
Lasalle	do	24		
Macon	do	1		
Madison	do	1		
Ogle	do	1		
Piatt	do	2		
Putnam	do	1		
Rock Island	do	3		
St. Clair	do	2		
Sangamon	do	5		
Shelby	do	21		
Stephenson	do	5		
Whiteside	do	4		
Total for State		108		
Louisiana:				
New Orleans	Mar. 3–9	16		
Michigan:				
Counties—				
Chippewa	Feb. 1–29	1		
Clinton	do	2		
Crawford	do	1		
Eaton	do	1		
Genesee	do	3		
Hillsdale	do	3		
Ingham	do	1		
Ionia	do	4		
Jackson	do	10		
Kalamazoo	do	8		
Kalkaska	do	3		
Lenawee	do	1		
Monroe	do	5		
Oceana	do	11		
St. Clair	do	5		
St. Joseph	do	1		
Shiawassee	do	4		
Tuscola	do	1		
Wayne	do	15		
Total for State		80		
North Dakota:				
Counties—				
Bottineau	Feb. 1–29	2		
Grand Forks	do	6		
La Moure	do	7		
McHenry	do	35		
Renville	do	1		
Walsh	do	8		
Total for State		59		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended Mar. 22, 1912.

Place.	Date.	Cases.	Deaths.	Remarks.
*Tennessee:				
Chattanooga	Mar. 3-9	1		
Knoxville	do	2		
Total		3		
Vermont:				
Counties—				
Caledonia	Feb. 1-29	19		
Chittenden	do	2		
Essex	do	3		
Lamoille	do	1		
Washington	do	3		
Total or State		28		
Grand total for the United States.		362		

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAR. 2, 1912.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	257	26	....	16	....	25	....	....	....	41	41	13	1
Boston, Mass	670,585	272	36	2	204	1	30	....	....	....	85	33	1	1
Chicago, Ill	2,185,283	726	124	22	99	2	175	14	....	....	195	83	17	2
Cleveland, Ohio	560,663	156	19	1	57	....	34	2	....	....	35	16	2	...
New York, N. Y	4,766,883	1,546	322	32	1,269	24	419	17	2	....	598	203	34	5
Philadelphia, Pa	1,549,008	502	83	12	16	2	70	2	....	....	103	43	20	5
Pittsburgh, Pa	533,905	158	19	3	15	....	23	....	....	....	26	11	6	...
St. Louis, Mo	687,029	248	41	2	26	....	29	1	5	....	48	17	2	....
Cities having from 300,000 to 500,000 inhabitants.														
Cincinnati, Ohio	364,463	132	6	....	4	....	31	3	....	....	38	18	1	...
Detroit, Mich	465,766	179	19	2	....	....	20	1	9	....	....	....	....	....
Los Angeles, Cal	319,198	117	12	1	1	....	11	....	2	....	24	18	5	...
Milwaukee, Wis	373,857	102	14	1	51	....	30	1	....	....	11	12	40	3
Newark, N. J	347,469	89	30	1	....	1	23	....	....	....	15	11	4	1
New Orleans, La	339,075	172	2	....	2	....	12	1	8	....	40	22	3	..
San Francisco, Cal	416,912	158	13	1	263	5	6	....	1	....	22	23	6	1
Washington, D. C	331,069	137	5	....	11	....	9	....	....	....	21	18	3	....
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	79	8	....	3	....	5	....	....	....	....	15	....	..
Jersey City, N. J	267,779	72	....	1	....	....	....	....	....	....	....	14	....	..
Providence, R. I	224,326	80	13	1	30	1	10	....	....	....	10	5	2	...
Seattle, Wash	237,194	49	3	....	10	....	1	....	1	....	7	5	7	1
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	30	2	....	[illegible]	....	8	2	....	....	2	1	....	
Cambridge, Mass	104,839	35	....	....	3	...	4	....	....	....	9	4	2	.
Columbus, Ohio	181,548	50	11	....	74	1	11	....	....	....	18	6	3	...

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality table, cities of the United States, for week ended March 2—Continued.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 100,000 to 200,000 inhabitants—Continued.														
Dayton, Ohio	116,577	45	3	1			2		7		1		1	1
Fall River, Mass	119,295	41	1	1			4				11	3		
Grand Rapids, Mich	112,571	35			2		4				4	1	8	
Lowell, Mass	106,294	41	2	1	15	1	2				6	3	1	2
Nashville, Tenn	110,364	55	1		1						16	8	1	3
Oakland, Cal	150,174	29	4				1				2	5		
Omaha, Nebr	124,096	36	2	1	1				1			1		
Spokane, Wash	104,402		2		25		3		11		1	1		
Toledo, Ohio	168,497	66	8		29	1	6					6	3	1
Worcester, Mass	145,986		8	3	2		6	2			5	2		
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	13	3	1			2				2	4		
Bayonne, N. J	55,545	8	1				11				1	1	1	
Brockton, Mass	56,878	11			119						5		1	
Elizabeth, N. J	73,409	13	1		3	1	3			1	2		1	
Evansville, Ind	69,647	34	3		1				1		1	3	3	
Fort Wayne, Ind	63,933	20	1		2		3					3		
Harrisburg, Pa	64,186	25	4		38				2		7	2		
Hartford, Conn	98,915	60	2		1		6				5	5	1	1
Hoboken, N. J	70,324		4	1							5			
Johnstown, Pa	55,482	15	3	1			1					1	1	
Kansas City, Kans	82,331		4		2		2				7		6	
Lawrence, Mass	85,892	32	2				1				1	5		
Lynn, Mass	89,336	22	1		6		3				6	2	2	1
Manchester, N. H	70,063	17	6		20				1		1		2	1
New Bedford, Mass	96,652	41	1		40		1				8	1		
Passaic, N. J	54,773	11	1		1			1			4	1		
Pawtucket, R. I	51,622	4												
Reading, Pa	96,071	46	2	3	4						1	3		
Saginaw, Mich	50,510		2				3				1		6	
San Antonio, Tex	96,614	48	1		17		4					6	2	
Schenectady, N. Y	72,826	19	2		10		1				9	2		
South Bend, Ind	53,684	14					1				1	2	2	
Springfield, Ill	51,678	11	5	1								2	2	
Springfield, Mass	88,926	24	2		31		2				5	2		
Trenton, N. J	96,815	35	2				2				5	2	1	2
Wichita, Kans	52,450	82	1											
Wilkes-Barre, Pa	67,105	23	6		10		1				5	1		
Wilmington, Del	87,411	38										2		1
Yonkers, N. Y	79,803		2	1	3		16				2	2	1	
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	8										3		
Auburn, N. Y	34,668	10					1				1	3		
Aurora, Ill	29,807	8	1				2					1		
Berkeley, Cal	40,434	7			14						2	1		
Binghamton, N. Y	48,443	17									7	3	1	
Brookline, Mass	27,792	10	1				1				1	2		
Chattanooga, Tenn	44,604						1		1		1			
Chelsea, Mass	32,452	12	1		2		4				1			
Chicopee, Mass	25,401	11	1		1									
Danville, Ill	27,871	10	1				1					5		
East Orange, N. J	34,371	8	3		1		4							
Elmira, N. Y	37,176	11			1						11	1		
Everett, Mass	33,484	5			4		1							
Fitchburg, Mass	37,826	10									2	2		
Haverhill, Mass	44,115	16	3		11		1				7			
Kalamazoo, Mich	39,437	17					5	1	6		2	2		1
Knoxville, Tenn	36,346	16	2				1		2			2		
La Crosse, Wis	30,417	3	1				12							1
Lancaster, Pa	47,227		1		10		1				2			
Lexington, Ky	35,099	32			1		1					2		
Lynchburg, Va	29,494	15	1		31		4				2	2		
Malden, Mass	44,404	14	2		2		6				2			
McKeesport, Pa	42,694	9	2	1	1						1			

MORBIDITY AND MORTALITY—Continued.

Weekly morbidity and mortality table, cities of the United States, for week ended March 2—Continued.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants—Continued.														
Montgomery, Ala	38,136	18	1		25						1	1		1
New Castle, Pa	36,280		5				1						6	
Newport, Ky	30,309	14	1				5				1	1	1	1
Newton, Mass	39,806	10			34		1				1			
Niagara Falls, N. Y	30,445	10	3									1		1
Norristown, Pa	27,875	15	1	1	70									
Orange, N. J	29,630	10	4		2		3							
Pasadena, Cal	30,291	12					1					3		
Pittsfield, Mass	32,121	8												
Portsmouth, Va	33,190	16							3					
Racine, Wis	38,002	6	2				2					1		
Roanoke, Va	34,874	8	2		50							3		
Rockford, Ill	45,401	32	3				1					3	120	6
Salem, Mass	43,697	13			2		4							
San Diego, Cal	39,578				1		1				4	4	1	1
South Omaha, Nebr	26,259	8	1											
Superior, Wis	40,384	5					1					1		
Taunton, Mass	34,259	15			3		1				1	2		
Waltham, Mass	27,834	7			23		1							
West Hoboken, N. J	35,403	9	5		2						3	1		
Wheeling, W. Va	41,641	11									1		3	
Williamsport, Pa	31,860	3	1		1						3			
Wilmington, N. C	25,748	13			11				1		2	1	1	
York, Pa	44,750		3										1	
Zanesville, Ohio	28,026	11											5	
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,383	7			1						2	1		
Beaver Falls, Pa	12,191	11					2						6	
Butler, Pa	20,782	10												
Cambridge, Ohio	11,327	3			3		1							
Camden, S. C		1			1									
Carbondale, Pa	17,040	6			3		4	1						
Clinton, Mass	13,075	5									1			
Coffeyville, Kans	12,687												1	
Concord, N. H	21,497	6			19									
Cumberland, Md	21,839	6	1		1						1		1	
Dunkirk, N. Y			1				2						1	
Galesburg, Ill	20,089	8	1						1					
Gloucester, Mass	24,398	13				1							1	
Harrison, N. J	14,498	2	2								2	1		
Kearny, N. J	18,659	5	1		14		1				1	1		
La Fayette, Ind	20,081	6			5									
Lebanon, Pa	19,240		7		1		3							
Marinette, Wis		3					2						1	
Marlboro, Mass	14,577	7	1		1							2		
Massillon, Ohio		3												
Medford, Mass	23,150	1			4		3							
Melrose, Mass	15,715	2			11		1					1		
Moline, Ill	24,199	4												1
Montclair, N. J	21,150	5	3				1				1	1		
Morristown, N. J	12,507	7										1		
Nanticoke, Pa	18,507	9	1		4									
Newburyport, Mass	19,240	4												
North Adams, Mass	22,012	7			2						2			
Northampton, Mass	19,431	5	1		2		2		1					
Ottumwa, Iowa	22,012	8					1					1		
Peekskill, N. Y		3	2											
Plainfield, N. J	22,050	5			64		4				1			
Pottstown, Pa		10			3							1		
Sandusky, Ohio	19,989	3			25							1		2
Saratoga Springs, N. Y		6										1	1	
Steelton, Pa	14,246	3	8	1	1		1				2			
South Bethlehem, Pa	19,973	6			5	1								
Tiffin, Ohio	11,894	4											1	
Warren, Pa	11,081	4									1			
Wilkinsburg, Pa	18,924	7	1		1		1				2			
Woburn, Mass	15,308	3			37									

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

Connecticut.—Month of February, 1912. Population of reporting towns, 1,126,841. Total number of deaths from all causes 1,550, including diphtheria 9, measles 16, scarlet fever 8, tuberculosis (pulmonary) 118, typhoid fever 4. Cases reported: Diphtheria 143 in 33 towns, measles 781 in 50 towns, scarlet fever 194 in 45 towns, smallpox 1, tuberculosis (pulmonary) 168 in 38 towns, typhoid fever 28 in 18 towns.

Florida.—Week ended March 2, 1912. Reports from the State board of health show diphtheria present in 4 localities with 10 cases, malaria in 2 localities with 8 cases, smallpox in 9 counties with 68 cases, tuberculosis in 9 localities with 15 cases, typhoid fever in 5 localities with 14 cases.

Kansas.—Month of January, 1912. Population, 1,690,949. Total number of deaths from all causes not reported. The deaths include diphtheria 7, scarlet fever 6, smallpox 1, tuberculosis 21, typhoid fever 5. Cases reported: Diphtheria 91, measles 78, scarlet fever 202, smallpox 49, tuberculosis 209, typhoid fever 39.

Pennsylvania.—Reports received from the State department of health show as follows:

Month of December, 1911. *Mortality.*—The total number of deaths was 9,307, including typhoid fever 142, scarlet fever 49, diphtheria 252, measles 29, whooping cough 64, smallpox 1, influenza 100, malaria 6, tuberculosis of the lungs 774, tuberculosis of other organs 118, cancer 439, diabetes 73, pellagra 1, meningitis 48, acute anterior poliomyelitis 6, pneumonia 1,253, diarrhea and enteritis (under 2 years) 196, diarrhea and enteritis (over 2 years) 65, Bright's disease 611, early infancy 520, suicide 61, accidents in mines 104, railway injuries 136, other forms of violence 462, all other diseases 3,797.

Month of January, 1912. *Morbidity.*—The total number of cases of communicable diseases reported was 13,462, including anterior poliomyelitis 11, anthrax 1, cerebrospinal meningitis 11, chickenpox 1,427, diphtheria 1,436, erysipelas 207, German measles 45, malarial fever 3, measles 4,242, mumps 688, pellagra 3, pneumonia 883, puerperal fever 11, rabies 1, scarlet fever 1,185, smallpox 15, tetanus 5, trachoma 5, trichiniasis 3, tuberculosis 1,329, typhoid fever 772, uncinariasis 4, whooping cough 1,175.

Wisconsin.—Three months ended December 31, 1911. Population, 2,333,860. Total number of deaths from all causes 6,010, including diphtheria 93, measles 17, scarlet fever 14, tuberculosis 481, typhoid fever 93. Cases reported: Diphtheria 824, measles 856, scarlet fever 1,114, smallpox 231, tuberculosis (pulmonary) 236, typhoid fever 374.

FOREIGN AND INSULAR.

CHINA.

Hongkong—Plague—Examination of Rats.

Surg. Brown reports: During the week ended February 3, 9 cases of plague with 8 deaths were reported at Hongkong.

During the week ended January 27, 1,824 rats were examined for plague infection, and during the week ended February 3, 1,942 rats. No plague-infected rat was found.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911, a fatal case February 9, 1912, and 2 fatal cases February 25, 1912.

The last plague-infected rats reported found at Honokaa were 49 found during the week ended March 2, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

	Week ended Feb. 17.	Week ended Feb. 24.
Total rats and mongoose taken	422	573
Rats trapped	412	381
Mongoose trapped	10	8
Rats killed by sulphur dioxide	....	184
Examined bacteriologically	372	503
Classification of rats trapped:		
Mus alexandrinus	54	39
Mus musculus	71	73
Mus norvegicus	54	46
Mus rattus	233	223
Average number of traps set daily	1,720	1,720
Classification of rats killed by sulphur dioxide:		
Mus alexandrinus	....	13
Mus norvegicus	....	171
Mus rattus	....	171

Death from Plague at Honokaa.

Dr. Ramus reported the occurrence of a death from plague March 18, at Honokaa.

Mosquito-Eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy, who is detailed as sanitary adviser to the Governor of the Territory of Hawaii:

Mosquito-eradication measures conducted at Honolulu from Feb. 19 to 24, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Ordered cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.
Gutters, house	1,643	17	30	5	14	14			20		
Gutters, street	272	6		69	1			2			7
Standing water	642	35	12	71	62			37			
Cesspools	867	22	9	21					8		
Privy vaults	1,091	16	5	24					12		
Holes and low places	527	119	2	77	7			98			2
Catch basins	874	34	11	94					3		
Leaky fixtures	60	1							38		
Plants, etc	2,293	1									
Swamps	91	16		11	4						
Ponds	33	7		3	4						
Troughs and tanks	213	18	8			9				2	8
Tubs, or other receptacles	662	99	16			246	2				
Tin cans, bottles	2,010	80	137			874					
Water barrels	381	58	6			80					30
Vacant houses	46	2							2		
Grease traps	151	1	3								
Yards	618	14	2		14			3			

Legal notices to abate nuisances served	127
Nuisances abated	114
Rice plantations inspected	6
Wagonloads of tin cans, bottles, etc., collected	33

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended January 27, 49 deaths from cholera and 16 from plague were reported in Calcutta; in all Bengal, 2,184 cases of plague, with 1,740 deaths; in all India, 14,384 cases of plague, with 11,977 deaths.

ITALY.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo week ended February 24, 1912.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Feb. 18	Franconia	New York			
19	Wallacston	Pensacola			
20	Italia	New York			
21	Principe di Piemonte	do	469	60	450
23	Duca d' Aosta	do	1,452	190	1,950
24	Sant' Anna	do	675	90	980
24	Luigi Ciampa	do			
	Total		2,596	340	3,380

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Feb. 19	Emilia	New York			
22	Principe di Piemonte	do	248	150	125
23	Citta di Palermo	New Orleans			
24	Italia	New York			
	Total		248	150	125

NEW ZEALAND.

Auckland—Examination of Rats.

The following information was taken from the bulletin issued by the department of public health of New Zealand:

During the four weeks ended January 6, 1912, 356 rats were examined for plague infection and during the four weeks ended February 3, 1912, 623 rats. No plague-infected rat was found.

The last plague-infected rat was found May 31, 1911.

PHILIPPINE ISLANDS.

Antirat Regulations in Force at Philippine Ports.

Manila, P. I., *January 3, 1912.*

Vessels coming to Manila direct from foreign ports will be required to anchor and await quarantine inspection and pratique before proceeding to the docks.

Upon arriving at the docks, all vessels, including cascoes, lighters, barges, etc., that make fast to the dock, or to any vessel that connects with the dock, will be required to observe the following precautions:

1. *Fending off from the docks.*—(*a*) Each vessel shall be fended off from the dock at least 6 feet at all points. Each vessel shall constantly use at least two fenders, placed at sufficient distances from the bow and stern to maintain the distance from the dock. (*b*) The rat shields on fenders shall be kept in position constantly.

2. *Placing rat guards on lines.*—No rat guards shall be used except those which have been approved by the quarantine service. A working plan of an approved rat guard may be obtained at the quarantine office.

3. *Raising gangways from docks at night.*—(*a*) Between sunset and sunrise, all gangways not in constant use shall be raised to a horizontal position and gangways shall be lowered and raised only when persons desire to leave and return to a vessel. (*b*) At night no vessel at a dock shall be permitted to use more than one gangway, board, or other means by which persons may reach or leave the vessel. (*c*) Large passenger vessels may keep their gangways lowered between sunset and sunrise provided that watchmen with cudgels are stationed at each gangway to prevent the escape of rats.

4. *Raising cargo chutes from docks at night.*—(*a*) All cargo chutes, boards, iron slides, or other devices used in discharging or landing cargo shall be removed between sunset and sunrise, except when special permission has been granted by the quarantine and customs officials to discharge cargo at night. (*b*) Cargo chutes shall be removed during the temporary absence of workmen, and upon the cessation of work. (*c*) When cargo chutes are in constant use, the responsible officials shall place a competent watchman with a cudgel at each cargo chute to prevent the escape of rats.

5. *Rat guards* shall be placed on all lines, ropes, cables, chains, hawsers, or other devices used in making a vessel fast, or lead to the dock, shore, or other vessel.

A rat guard shall be held to be properly applied—(*a*) When it is of a type approved by the quarantine service. (*b*) When its shank fits the lines, cables, hawsers, ropes, etc., tightly. It is usually necessary to pad the line with burlap in order that the shank of the guard may be tightly closed. (*c*) When it is tightly closed at all points and there are no openings in the shield proper. (*d*) When it is applied on the line not more than 6 feet from the vessel. (*e*) When it does not touch or overhang a dock, lighter, boat, or the shore.

When, by reason of its proximity to a vessel, it is impossible to apply a rat guard to a line, fresh tar shall be placed upon the line within 1 foot of the vessel and extending for a distance of not less than 6 feet, and a fresh coating of tar shall be applied daily.

6. *Removing lighters and boats from alongside at night.*—All boats belonging to a vessel shall be raised to the davits between sunset and sunrise, or the lines leading from the vessel to such craft in the water shall be equipped with rat guards.

No cascoes, lighters, or other cargo-carrying vessels shall be permitted to remain alongside a vessel after sunset unless cargo is actually being discharged, and then only by special permission. This also applies to all vessels from a foreign port anchored in the bay.

7. *Disposing of garbage.*—Vessels alongside docks, and those anchored or moored in the bay or harbor, shall not be permitted to throw garbage overboard. Such waste shall either be burned in the vessel's furnaces, or placed in the receptacles provided for the purpose.

8. *Docks.*—(*a*) The doors or gates which act as barriers to prevent rats from gaining access to the shore shall be kept closed as much as the traffic will permit, especially at night. (*b*) The small doors at the shore end of the docks shall be kept closed con-

stantly and automatically by means of springs or weights. (*c*) Deaths and sickness on vessels shall be reported promptly to the quarantine office. (*d*) The presence of dead rats on the piers or in the vicinity shall be reported immediately to the quarantine office. (*e*) A sufficient number of rat-catching cats or dogs shall be kept on the docks at all times. (*f*) Garbage shall not be scattered on the ground around the piers, or on the riprap. (*g*) Rat traps shall be set upon the docks every night. (*h*) Mats, straw, rubbish, and other material which may afford a nesting place for rodents shall not be permitted to accumulate upon or in the vicinity of the piers.

VICTOR G. HEISER,
Passed Assistant Surgeon, Public Health and Marine Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

VESSELS AT PHILIPPINE GOVERNMENT PIERS—PRECAUTIONS TO PREVENT LANDING OF RATS.

[Manila Customhouse, General Order No. 203.]

GOVERNMENT OF THE PHILIPPINE ISLANDS,
DEPARTMENT OF FINANCE AND JUSTICE,
BUREAU OF CUSTOMS,
Manila, January 2, 1912.

PARAGRAPH I. When a foreign or coastwise vessel berths at a Philippine Government pier the master of the vessel shall, immediately after the lines have been secured to the pier, cause rat guards of sufficient size and proper construction to be placed on all the lines leading to the pier so as to prevent any rats from going ashore.

PAR. II. The master of a vessel alongside a pier shall also be required to have suitable rat guards placed on all lines leading from lighters or cascoes to the vessel.

PAR. III. No cargo shall be discharged from or received on board a vessel at a pier before suitable rat guards have been placed on all the lines leading from the carriers to the vessel and from the vessel to the pier.

PAR. IV. When a vessel berthed at a pier has not a supply of suitable rat guards on board, a sufficient number shall be loaned to the vessel by the wharfinger in charge of the pier, receipt to be taken in each case for the rat guards and the vessel held responsible for the loss of any of the rat guards so loaned.

PAR. V. All foreign and coastwise vessels docking at the Philippine Government piers shall be fended off from the piers a distance of at least 6 feet.

PAR. VI. All cargo chutes and gangways connecting the vessel with the pier shall be removed at night, as soon as the vessel has stopped work of discharging or receiving cargo and not put in place again until the following morning. This does not apply to the gangways of passenger vessels, which need not be removed until the pier is actually closed and work has been stopped.

PAR. VII. The gates at the side entrances to the piers shall be kept closed, and the guard gates at the main entrance to the piers shall be lowered each night as soon as the work on the pier ceases.

PAR. VIII. The wharfinger in charge of the pier shall be held strictly and personally accountable while on duty for the carrying out of these regulations, with the exception of those contained in Paragraphs II and III, for the strict observance of which the customs inspector in charge of the vessel shall be held responsible. When the pier is closed and the wharfinger not on duty, the inspector in charge of the vessel during the daytime and at nighttime when the vessel works, shall be held accountable for the observance of all the regulations contained in this General Order. The night watchman on duty at the piers shall also, in the absence of the wharfinger or inspector, be required to prevent, if possible, any violation of these regulations and report all violations of same taking place during his tour of duty.

PAR. IX. For the violation of any of the provisions contained in Paragraphs I, II, and III of this General Order, the master of the vessel shall be liable to a fine of not less than ₱5, Philippine currency, and not more than ₱500, Philippine currency, in the discretion of the court.

PAR. X. A copy of this General Order, which goes into effect immediately, shall be furnished the master of each vessel berthing at a pier, by the wharfinger in charge of the pier.

H. B. MCCOY,
Insular Collector of Customs.

Approved:
GREGORIO ARANETA,
Secretary of Finance and Justice.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING THE WEEK ENDED MAR. 22, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Jan. 21-27	15	15	
Calcutta	do.		49	
Madras	Feb. 4-10	26	18	Total Madras Presidency, Jan. 1-31: Cases, 13,411; deaths, 8,509.
Negapatam	Jan. 14-27		42	
Siam:				
Bangkok	Dec. 31-Jan. 27		196	
Turkey in Asia:				
Aleppo	Feb. 18-24	4	3	Provinces, Jan. 29-Feb. 5: Cases, 11; deaths, 27.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong	Jan. 26-Feb. 3	9	8	
Hawaii:				
Honakaa	Mar. 18	1	1	
India:				
Calcutta	Jan. 21-27		16	
Karachi	Feb. 4-10	16	15	
Siam:				
Bangkok	Dec. 21-Jan. 27	1	1	
Straits Settlements:				
Singapore	Jan. 21-27	3	3	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Canada:				
Quebec	Mar. 3-9	11		
Windsor	Feb. 18-Mar. 9	5		
China:				
Hongkong	Jan. 27-Feb. 3	41	27	
Colombo:				
Ceylon	do	1		
Egypt:				
Port Said	Jan. 30-Feb. 4	1		
Gibraltar	Feb. 27-Mar. 3	1		
India:				
Bombay	Feb. 4-10	74	23	
Calcutta	Jan. 21-27		1	
Madras	Feb. 4-10	16	6	
Italy:				
Naples	Feb. 18-24	8		
Turin	Feb. 19-25	1		
Mexico:				
Aguascalientes	Feb. 26-Mar. 3		2	
Magdalena	Mar. 2			31 cases present.
Porfirio Diaz	Mar. 3-9	1	1	
Tampico	Feb. 24-Mar. 1		4	
Russia:				
Odessa	Jan. 21-Feb. 24	11		
Siam:				
Bangkok	Dec. 31-Jan. 27		700	
South Africa:				
Johannesburg	Feb. 4-10	7		
Spain:				
Valencia	Feb. 18-24	34		
Straits Settlements:				
Singapore	Jan. 21-27	3		
Turkey in Asia:				
Beirut	Feb. 18-24	150	10	
Turkey in Europe:				
Constantinople	Feb. 19-25		15	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAR. 15, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jass-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total Sept. 24-Dec. 23: Cases, 2,066; deaths, 1,494.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India:				
Bahroin Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bassein	Jan. 14-20	8	6	
Calcutta	Nov. 5-Jan. 28		378	
Madras	Nov. 26-Feb. 3	452	375	Madras Presidency, Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545.
Negapatam	Jan. 14-20	23		
Rangoon	Oct. 1-Nov. 30	6	3	
Indo-China:				
Saigon	Nov. 20-Jan. 29	1,412	978	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade, district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Dec. 30		559	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4; Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 15, 1912.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia				Provinces in Asia and Europe. Apr. 16–Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6–21: Cases, 53; deaths, [illegible]
Acre	Jan. 21	7	6	In vicinity.
Adana	Dec. 2–6	16	5	
Aleppo	Jan. 26–Feb. 10	26	15	
Amara	Oct. 15	1	1	
Basra	Oct. 22–28	14	10	
Erzeroum, vilayet	Sept. 11–16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20–28	10	10	
Kharput	Nov. 19–Dec. 30	47	47	
Jiddah	Dec. 2–24	323	310	
Mekka	Dec. 4–24	905	879	Sept. 1–Dec. 24: Cases, [illegible] deaths, 1,565.
Mersina	Dec. 1–7	2	1	
Osmania	Dec. 1–6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18–23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24–Feb. 3	8	2	
Durazzo	Dec. 7–13	2		
Janina	Jan. 14–22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6–19	4	3	In Serres.

YELLOW FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Ceara	Jan. 1–31		1	
Manaos	Nov. 19–Feb. 10		18	
Para	Dec. 9–16	1	1	
Pernambuco	Jan. 1–15		2	
Ecuador:				
Bucay	Nov. 16–30	2		
Duran	Dec. 1–15	3	2	
Guayaquil	Nov. 16–Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Espita	Dec. 31–Jan. 6	1		
Kambul, hacienda	Feb. 21–27		7	
Maxcanu	Dec. 31–Jan. 6	1		
Merida	Nov. 12–Feb. 10	18	9	Total Aug. 1–Feb. 24: Cases, [illegible] deaths, 29.
Puerto Mexico (Coatzocoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4–7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31–Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19–25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16–Jan. 15	25	8	
La Guaira	Feb. 27			Present.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17–23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Brazil:				
Bahia	Sept. 1–30		2	
Para	Dec. 24–Feb. 17	18	12	
Pernambuco	Oct. 16–Jan. 16		4	
Rio de Janeiro	Nov. 12–Dec. 23	6	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 15, 1912.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
British East Africa:				
Kismayu	Oct. 15–25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12–Jan. 6	10	4	
Pisagua	Nov. 1–30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9–Jan. 13	7	5	
Dutch East Indies:				
Java				Total Mar. 1–Dec. 30: Cases, 1,817; deaths, 1,324.
Pasoeroean Residency, Malang District.	Nov. 12–Feb. 3	83	44	
Soerobaya	Oct. 17–27	2		
German East Africa:				
Dar-es-Salaam	Nov. 13–15	1	1	From the interior via Bergamogo.
Ecuador:				
Guayaquil	Nov. 16–Dec. 15	102	42	
Egypt				Total Jan. 1–Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1–Feb. 20	21	15	Sept. 11–16: Cases, 50; deaths, 28.
Assouan	Jan. 1–Feb. 21	23	12	
Behera	Jan. 1–25	3	2	Sept. 11–16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16–21	5	2	
Fayoum	Jan. 1–26	1		
Galioubeh	Jan. 1–Feb. 18	2	2	Oct. 5–Dec. 26: Cases, 1.
Garbieh	Jan. 1–25	8	4	
Kena	Jan. 1–Feb. 22	11	9	Nov. 20–Dec. 13: Cases, 3; deaths, 3.
Minieh	Jan. 1–Feb. 1	3	2	Dec. 13: Cases, 1.
Hawaii:				
Honakaa	Feb. 9–25	3	3	
India:				
Bombay	Nov. 19–Feb. 3	113	97	
Calcutta	Nov. 11–Feb. 6		46	
Karachi	Nov. 26–Feb. 15	54	52	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1–6	1	1	
Rangoon	Oct. 1–Nov. 30	38	39	
Bombay Presidency and Sind.	Oct. 29–Jan. 27	46,419	33,705	
Madras Presidency	do	7,157	5,622	
Bengal	do	10,325	7,878	
United Provinces	do	27,664	24,216	
Punjab	do	2,336	1,741	
Burma	do	566	494	
Eastern Bengal and Assam	Jan. 1–6	1	1	
Central Provinces	Oct. 29–Jan. 27	11,481	9,027	
Coorg	do	86	50	
Mysore State	do	6,963	5,309	
Hyderabad State	do	19,267	17,731	
Central India	do	5,754	4,764	
Rajputana and Ajmere Merwara.	do	628	504	
North West Province	do	2	2	Total for India, Oct. 29–Jan. 27: Cases, 13,649; deaths, 111,044. Total, year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13–Jan. 22	23	2	
Mauritius	Nov. 3–Dec. 21	43	30	
Peru:				
Departments—				
Callao	Oct. 1–21	1		In November 1 case; in January 3 cases with 2 deaths.
Chiclayo	do	12	4	
Chosika	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Feb. 21, 34 cases in the lazaretto.
ua	do	13	6	Trujillo.
slands:				
rantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
ve:				
government	Sept. 21–Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol. I.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 15, 1912.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Siam:				
Bangkok	Nov. 4-Dec. 2		2	
South Africa:				
Durban	Jan. 14-19	2	2	
Straits Settlements:				
Singapore	Nov. 5-Jan. 6	17	16	
Turkey in Asia:				
Jiddah	Jan. 13-Feb. 2	6	1	

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Jan. 15	5	3	And vicinity.
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	Oct. 1-Nov. 30		31	
Austria-Hungary:				
Bohemia	Jan. 14-20	1		
Budapest	Feb. 4-10	25		
Galicia	Dec. 24-30	1		
Krain	Jan. 14-20	7		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-20	1		
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Jan. 15		388	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Jan. 20	4	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 2	2		
Nelson	Dec. 24-30	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-20	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Mar. 2	69		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-Feb. 10	2	1	
Windsor	Feb. 4-10	2		
Quebec—				
Montreal	Dec. 17-Mar. 2	21		
Quebec	Dec. 10-Mar. 2	242	2	
Ceylon:				
Colombo	Nov. 12-18	1		
Chile:				
Iquique	Dec. 10-16	2		
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		Feb. 17—Decreasing.
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chenghai	Jan. 29-Feb. 10			Present.
Chungking	Nov. 18-Jan. 20			Do.
Hankow	Jan. 21-Feb. 3	1	1	
Hongkong	Nov. 12-Jan. 27	209	154	
Kityang	Jan. 21-Feb. 3			Do.
Nanking	Dec. 10-Feb. 10			Do.
Shanghai	Dec. 11-Feb. 4	1	5	Deaths among natives.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-Jan. 14	3		
France:				
Marseille	Jan. 1-31		3	Nov. 1-30, 1 death.
Paris	Dec. 3-Feb. 17	77	5	
Germany				Total, Dec. 31-Feb. 24: Cases, 1
Hamburg	Jan. 21-27	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 15, 1912.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Great Britain:				
Bristol	Jan. 29–Feb. 3	2		
London	Jan. 14–Feb. 24	6	1	
West Hartlepool	Feb. 18–24	1		
India:				
Bombay	Nov. 19–Feb. 3	148	72	
Calcutta	Nov. 19–Feb. 6		18	
Madras	Nov. 26–Jan. 27	56	33	
Rangoon	Oct. 1–Nov. 30	29	9	
Indo-China:				
Saigon	Nov. 13–Jan. 29	25	1	
Italy:				
Genoa	Dec. 1–Jan. 31	33	2	
Leghorn	Dec. 16–Feb. 24	92	1	
Messina	Nov. 19–Jan. 31		6	
Naples	Dec. 3–Feb. 17	68	1	
Palermo	Nov. 26–Feb. 17	2,279	766	
Turin	Jan. 15–Feb. 18	5		
Japan:				
Arima-Mura	Nov. 12–18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17–23	1		
Kobe	Jan. 22–28	2	1	Jan. 20, 1 case from s. s. Suverio from Hongkong. Jan. 28, 1 case from Shingo Maru.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Java:				
Batavia	Nov. 12–Feb. 3	30	7	
Malta	Dec. 24–Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18–Feb. 11		5	
Chihuahua	Nov. 20–Feb. 11	92	36	
Coahuila, State	Oct. 1–30		16	
Guadalajara	Jan. 14–Feb. 17	4	2	
Juarez	Dec. 19–Feb. 24	12	5	
Magdelena	Dec. 23–Feb. 24	91	49	Feb. 7, 62 cases present.
Manzanillo	Feb. 18–24	1		
Mazatlan	Dec. 11–Feb. 27		10	Feb. 13, 33 cases in the lazaretto.
Mexico	Nov. 26–Jan. 20	61	33	
Monterey	Dec. 11–24		2	
Porfirio Diaz	Dec. 3–Feb. 24		32	
Salina Cruz	Feb. 11–17	2	1	
San Antonio	Jan. 1–21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21–27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12–Dec. 30	3	1	
Tampico	Dec. 1–Feb. 20		10	
Tapachula	Nov. 1–Dec. 31		14	
Portugal:				
Lisbon	Dec. 9–Feb. 24	38		
Russia:				
Batum	Dec. 1–31	1		
Libau	Dec. 17–23	1		
Moscow	Nov. 19–Feb. 3	26	10	
Odessa	Nov. 26–Jan. 13	10	1	
Reval	Nov. 1–30	1		
Riga	Dec. 24–Jan. 27	16		Oct. 1–Nov. 30; deaths, 2.
St. Petersburg	Nov. 19–Feb. 3	122	22	
Warsaw	Nov. 5–Dec. 2		185	
Siam:				
Bangkok	Nov. 5–Dec. 30		626	
Siberia:				
Omsk	Jan. 1–31	7		
South Africa:				
Durban	Jan. 21–27	1		
Johannesburg	Jan. 7–27	29		
Spain:				
Barcelona	Feb. 6–12		1	
Cadiz	Nov. 1–Jan. 31		22	
Madrid	Dec. 1–Jan. 31		3	
Malaga	Nov. 1–30		45	
Seville	Dec. 1–31		5	
Valencia	Dec. 3–Feb. 17	165	11	
Straits Settlements:				
Singapore	Nov. 19–Jan. 13	18	7	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 15, 1912.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Feb. 17		42	
Turkey in Asia:				
Beirut	do	855	77	
Turkey in Europe:				
Constantinople	Dec. 4-Feb. 18		65	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aguascalientes	Mar. 3	40,000	50	3				2	2				1	
Aix la Chapelle	Feb. 10	157,512	60	6					1					3
Amsterdam	Feb. 24	566,131	143	24								1	1	3
Antwerp	Feb. 17	316,604	73	9									1	
Assuncion	Jan. 13	75,000	28							5				
Athens	Feb. 19	250,010	76	20								1	4	
Barmen	Feb. 10	170,900		10					1		1	2		
Do	Feb. 17			4							2	1		
Batavia	Jan. 27	217,630						1						
Do	Feb. 3							1						
Beirut	Feb. 17	80,000	20					10		10				
Do	Feb. 24		140					10		5				
Belfast	do	385,492	202	19										9
Belgrade	Feb. 17	90,050	37								1	1		
Bergen	do	87,749	33	5								1		
Do	Mar. 2		22	6						1	2			
Birmingham	Feb. 24	842,512	242									1		12
Bombay	Feb. 10	979,445	690	46	12			23					9	
Bremen	do	246,850	79	7							1	2	3	
Do	Feb. 24		86	7							1	4	9	
Bristol	do	359,400	116	7						2	1		5	1
Brussels	do	649,846	216	26						2	2	2	4	1
Budapest	Feb. 10	881,600									4	3	4	1
Cairo	Feb. 4	689,439	435	33					3	3		7		
Calcutta	Feb. 27	890,493	480	23	16	49		1						
Chemnitz	Jan. 20	297,150	99	8								1		
Do	Feb. 3	297,150	82	7								1		
Do	Feb. 10	298,400	86	5								1	2	1
Do	Feb. 17		75	6								1	1	
Christiana	Feb. 24	246,000	71	9								4		
Coburg	Feb. 17	24,299		2								1		
Cologne	do	525,671	198	21							1	4	3	6
Colombo	Jan. 27	227,026	150	16					10					
Do	Feb. 3		126	12						9				
Constantinople	Feb. 18	1,000,000	288	35				12		5	3	1	7	
Do	Feb. 25		341	37				15		6	4	2	5	
Copenhagen	Feb. 10	465,000	152	18							3	1		3
Dublin	Feb. 17	406,536	197	27								1	3	1
Do	Feb. 24		194	26						1	2	1	2	4
Dundee	do	171,006	50	5								1		2

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Edinburgh	Feb. 24	321,200	114	10								2	4	2
Erfurt	Feb. 17	126,010	41	1								4		
Frankfort on the Main	Feb. 10	423,600	106									3		2
Do	Feb. 17		111									3		1
Ghent	..do	166,235	62	5								1		1
Gibraltar	Mar. 3	25,367	10	1									1	
Glasgow	Mar. 1	785,600	325							2	1	10	41	4
Greenock	Feb. 24	75,900	34	2									2	
Halifax	Mar. 2	46,000	13	2							1			
Hamburg	Feb. 24	953,079	291	45							5	8	2	3
Hongkong	Feb. 3	336,488			8			27				1		
Hull	Feb. 24	282,987	95							1				
Do	Mar. 2		85							1				1
Karachi	Feb. 10	108,644	119		15								22	
Kingston	Mar. 9	21,000	7	2										
Kobe	Feb. 11	418,646	160							2				
Konigsberg	Feb. 17	252,000	111	15									4	3
Leeds	Feb. 24	445,568	145	15							2	4		5
Leipzig	Feb. 10	605,755	165	28						1		2		
Leith	Feb. 24	81,000	31	1								3	1	
Liege	Feb. 10	167,521	68	7						1				
Do	Feb. 24	167,676	61	2							1		3	1
Liverpool	Feb. 2	752,065	294	27						1	4		4	2
London	Feb. 24	7,340,125	1,981							6	5	16	12	34
Madras	Feb. 10	518,660	433			18		6						
Montreal	Mar. 9	466,197	181	21						1	1	2		3
Nagasaki	Feb. 11	179,257	40	3						1	1			
Newcastle-on-Tyne	Feb. 3	269,193	98	13							2	1	1	1
Do	Feb. 10		110	6						1	1	1		1
Do	Feb. 17		96	12						2				1
Do	Feb. 24		82	12						1	1			
Nottingham	Feb. 17	260,000	90	5								1	12	2
Ottawa	Mar. 2	90,000	32	2								1		
Prague	Feb. 17	225,204	109	10						2	2		4	1
Paris	..do	2,888,110	1,148	258						7	3	5	31	3
Porfirio Diaz	Mar. 9	16,000		1				1						
Port Said	Feb. 4	52,811	31							1				
Quebec	Mar. 9	78,200		2										
Rangoon	Jan. 27	293,316	298		5			2						
Do	Feb. 3		182					4						
Rotterdam	Feb. 17	437,006	118							1	1			
Do	Feb. 24		114									1		
San Luis Potosi	Dec. 30	82,967	50					1	1					
Santa Cruz de Teneriffe	Feb. 17	46,000	17	1				5						
Santos	Dec. 30	85,000	39	3						1				
Sarnia	Mar. 9	9,986	5							2				
Shanghai	Feb. 11	500,000	186	23							2	1	25	
Sheffield	Feb. 10	455,000	194	16						4	1	1	2	
Do	Feb. 24		164	8						1		2		11
Singapore	Jan. 27	303,828	196	32	3					2				
Southampton	Mar. 2	120,891	34	5										1
South Shields	Feb. 3	109,676	54	4							1	2		1
Do	Feb. 17		48	5						1				1
Do	Feb. 24		23	1										1
Stettin	Feb. 17	234,033	65	9								2		
Stoke-on-Trent	Feb. 24	237,153	72	7								1	1	1
Do	Mar. 2		74	5								1	2	
Swansea	Jan. 20 Mar. 2	117,314	222	25							2	7	4	12
Tampico	Mar. 1	23,452	40					4						
Trieste	Feb. 17	233,599	88									3	1	1
Turin	Feb. 25	430,770	165	15								2	2	2
Valencia	Feb. 17	240,000	98	9										
Do	Feb. 24		104	5						1		1		
Vienna	Feb. 10	2,064,583	719	119						1	2	6	5	2
West Hartlepool	Feb. 24	63,932	19											
Yokohama	Feb. 19	444,039										1		
Winnipeg	Mar. 2	151,958	65	3								1	1	

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

ARGENTINA—*Buenos Aires.*—Month of December, 1911. Population, 1,360,406. Total number of deaths from all causes 2,155, including diphtheria 21, measles 17, scarlet fever 3, tuberculosis 196, typhoid fever 19.

BRAZIL—*Ceara.*—Month of January, 1912. Population, 60,000. Total number of deaths from all causes 134, including tuberculosis 15, typhoid fever 5, yellow fever 1.

CANADA—*Hamilton.*—Month of February, 1912. Population, 82,000. Total number of deaths from all causes 100, including tuberculosis 4.

Sherbrooke.—Month of February, 1912. Population, 17,700. Total number of deaths from all causes 22, including diphtheria 2, tuberculosis 5.

FRANCE—*St. Etienne.*—Two weeks ended February 15, 1912. Population, 150,000. Total number of deaths from all causes 149, including diphtheria 1, measles 1, scarlet fever 1, tuberculosis 22, typhoid fever 3.

GERMANY—*Kehl.*—Month of January, 1912. Population, 182,426. Total number of deaths from all causes 245, including diphtheria 2, scarlet fever 1, tuberculosis 37.

GREAT BRITAIN—Week ended February 17, 1912:

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 18.6 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 26.6 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Tralee, viz, 5.3, and the highest at Armagh, viz, 41.2 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 22.1 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Leith, viz, 12.2, and the highest at Perth, viz, 33.2 per 1,000. The total number of deaths from all causes was 923, including diphtheria 6, measles 63, scarlet fever 2, typhoid fever 4.

ITALY—*Florence.*—Month of January, 1912. Population, 239,295. Total number of deaths from all causes 473, including diphtheria 3, measles 5, tuberculosis 44, typhus fever 3.

MALTA.—Three weeks ended February 17, 1912. Population, 213,395. Total number of deaths from all causes 235, including measles 3, tuberculosis 10, typhoid fever 4.

URUGUAY—*Montevideo.*—Month of December, 1911. Population, 321,224. Total number of deaths from all causes 571, including diphtheria 1, tuberculosis 65.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

VOL. XXVII. MARCH 29, 1912. No. 13.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BEAUMONT, TEX.

ICE CREAM—MANUFACTURE AND SALE.

SECTION 1. That from and after the 1st day of January, A. D. 1912, it shall be unlawful for any person, firm, or corporation, either as principal or their agents, servants or employees, to manufacture ice cream for the purposes of sale within the city of Beaumont, without having first obtained from the city health officer of the city of Beaumont a permit so to do.

SEC. 2. To obtain such permit, the applicant shall present to the said city health officer a written application, upon a form to be furnished by the said city health officer, and shall fill therein the name and resident address of the said applicant, the place where he intends to manufacture ice cream for the purpose of sale. Before any permit shall be issued by the health officer the premises where the applicant intends to manufacture his ice cream shall be inspected by the health officer or some one under his direction, and unless the parties applying for the permit can show strict compliance with the requirements hereinafter set out, no permit to engage in said business shall be issued.

The said requirements are as follows:

1. The ice-cream plant must be properly screened.

2. The floors, walls, and ceilings must be sanitary.

3. The water-closets and urinals must be separate from the plant.

4. The room used for mixing cream must be close sealed, properly ventilated and screened, and with no unsanitary surroundings or neighborhood.

5. The utensils used in the manufacture or distribution of the cream must be of porcelain or granite ware, and in good condition.

6. All labor employed in or about the said establishment, and all persons engaged in said manufacture, must be cleanly both in person and attire.

7. Every person or employee connected with the business shall wear a suitable garb and be free from disease.

8. The cans must be sterilized at a temperature of 212° F., and for not less than 15 minutes, and a suitable room must be provided where sterilized cans can be kept where their sterility will be maintained.

9. No ice cream shall ever be returned or exchanged after once leaving the plant.

10. Anilin dyes must not be used, nor must same be found in the ice-cream plant.

11. No one, with the exception of employees, shall be permitted in the plant except on official business.

12. The ingredients that are used in manufacture of ice cream must be fresh and properly preserved, and under no circumstances shall decayed or overripe fruit ever be used in the manufacture of the cream.

The permit issued under this section shall be given only for the place named therein, and if at any time the applicant shall move his place of business, he shall secure a new permit.

Sec. 3. In the event any person, firm, or corporation who has complied with the requirements of this ordinance and has received a permit to conduct such business should at any time thereafter violate or disregard any of the requirements above named, the city health officer shall have the right to cancel the permit granted and require said person to discontinue business, and in addition to this remedy, any person, firm, or corporation engaged in the business of manufacturing ice cream for the purpose of sale in the city of Beaumont shall at any time neglect or violate any of the requirements or specifications above named, they shall, for each offense, on conviction thereof in the corporation court, be punished by a fine as provided in section 8 of this ordinance; provided, that before the city health officer shall have the right to cancel any permit issued under this ordinance the owner of said permit shall be given written notice that he will be accorded a hearing at any time not sooner than five days, to show cause why his permit should not be canceled.

Sec. 4. Any person, firm, or corporation securing a permit to manufacture ice cream for the purpose of sale within the city of Beaumont shall keep said permit posted in a conspicuous place where said ice cream is manufactured.

Sec. 5. Ice cream shall be manufactured from fresh, pure cream, or whole milk and cream, sweetened with clean, high grade, white granulated sugar, flavored with harmless flavors, and if colored, with harmless colors.

1. Plain ice cream shall contain not less than 8 per cent of butter fat and shall contain not more than 0.2 per cent of filler (gelatin or the vegetable gums).
2. Fruit ice cream shall contain not less than 6 per cent of butter fat and not more than 0.2 per cent of filler, and the fruit contained shall be sound, clean, and mature.
3. Nut ice cream shall contain not less than 6 per cent of butter fat, and not more than 0.2 per cent of filler, and the nuts used must be sound and nonrancid.

Sec. 6. This ordinance is intended to be supplemental to any ordinances on the subject matter heretofore passed by the city council.

Sec. 7. This ordinance shall go into effect on the 1st day of January, A. D. 1912, provided it has passed the city council, been approved by the mayor, and published as required by the city charter.

Sec. 8. Any person, firm, or corporation who shall violate any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and, upon conviction thereof in the corporation court of the city of Beaumont, shall be fined not less than $25 nor more than $200.

[Ordinance adopted Oct. 17, 1911.]

BROOKLINE, MASS.

FOODSTUFFS—PROTECTION AND CARE.

Article IV. *Foodstuffs.*

Section 1. Every person, firm, or corporation engaged in the sale or transportation of foodstuffs shall cause his wares or those under his charge to be properly protected by screens or otherwise against contamination by flies, street dust, or other contaminating agency.

Sec. 2. No foodstuffs intended for sale shall be kept in any room used for living or sleeping purposes.

Sec. 3. No person or corporation, individually or by his or its agents, servants, or employees, shall sell or offer for sale in the town of Brookline any refrozen ice cream or ice cream which contains any artificial coloring matter.

Sec. 4. All glasses or other drinking utensils used at soda fountains, restaurants, or other refreshment stands shall be sterilized at least once each day and shall be washed and rinsed in running water before each separate use thereof.

Sec. 5. Premises, compartments, rooms, receptacles, or ice chests used for the storage, manufacture, or sale of foodstuffs shall be kept cleansed in a manner satisfactory to the board of health.

[Ordinance, board of health, adopted Nov. 6, 1911.]

GREENSBORO, N. C.

FOODSTUFFS—MARKET REGULATIONS.

Sec. 369. That no fresh meats, fish, or oysters of any kind shall be sold, exchanged, or delivered in the city of Greensboro except in or from the city market in the city hall building and at such other places as the board of commissioners may designate as branch markets or places for the sale of such articles; provided, that this shall not apply to wholesalers who sell to licensed retailers or who sell occupants of the city market; provided further, that this shall not apply to those who sell to common carriers, to persons or firms out of town, or to persons, firms, or corporations who sell in quantities of not less than one-fourth of a carcass.

Sec. 370. That the markets of the city shall be under the supervision and control of the commissioner of public safety or such assistants as he may employ or the board of commissioners may appoint.

Sec. 371. That at the time the board of commissioners elects other officers of the city, or as soon thereafter as practicable, said board shall elect a market keeper, who shall be a special policeman with the same powers and authority conferred upon regular police officers. He shall be required to furnish bond in the sum of $500 payable to the city of Greensboro, conditioned upon the faithful performance of his duties and the proper accounting to the city and the occupants of the city market for all money or other property or things of value left in his hands by virtue of his office. He shall perform all duties imposed by the commissioner of public safety or by the board of commissioners through the said commissioner.

Sec. 372. That the board of commissioners shall on or before the 1st day of June of each year fix the rent for all the stalls in the city market in the city hall building or in any other building or place that the city may own, rent, or lease as a branch city market, for the succeeding year, beginning June 1, and the commissioner of public safety shall rent said stalls on said 1st day of June at the prices fixed by the board of commissioners, or as many of said stalls as there may be applicants for. All stalls must be rented for one year beginning June 1, or the unexpired portion of the year, and all stall rents shall be paid monthly on the 1st day of each and every month to the commissioner of finance.

The occupant of each stall shall execute a bond in favor of the city for an amount sufficient to cover one year's rent, said bond to be approved by the board of commissioners.

Any occupant of any stall failing to pay rent for same, as hereinbefore provided, shall be notified by the market keeper to vacate said stall within 24 hours and if he fails or declines to vacate within said time the market keeper shall have the right to eject him from the stall and premises, without further notice and without prejudice to any other remedy.

Sec. 373. That all markets owned, leased or rented by the city of Greensboro shall be kept open daily, except Sunday and at such hours as the board of commissioners may designate. Except during such hours as are designated by the board of commissioners for markets to be kept open, it shall be unlawful for any person to enter said markets, except the market keeper and such officers and employees of the city as may from time to time be designated by the commissioner of public safety to care for or assist in caring for and cleaning of said market.

It shall be the duty of the market keeper, during hours that the market is closed, to see to it that all doors are securely fastened, and all property therein safely kept.

Sec. 374. That no person shall be allowed to rent a stall in the city market, or a branch city market, for any purpose except the sale of fresh meats, fish and oysters, and such other articles of food as are usually sold in a meat market.

Sec. 375. That no dogs or other live brute animals shall at any time be allowed in the markets, and no wagons, horses, or vehicles of any kind shall be allowed at any time on the market square, around the city hall, except for the purpose of loading or unloading supplies brought to or carried from said market.

Sec. 376. That it shall be unlawful for any occupant of any stall or place designated as a branch market to keep, exchange, sell, or offer for sale or exchange in said stall or place any live animal or any tainted or unsound meat or food of any kind, or meats which have not been properly approved by the meat and milk inspector, as provided in ordinance known as meat-inspection ordinance.

The meat and milk inspector shall, at least once each day, and as much oftener as the commissioner of public safety may direct, inspect all meat, fish, oysters, and all other articles offered for sale in the city market, and at such times as the commissioner of public safety may direct, in all other markets of the city and summarily condemn all such as he may find tainted, spoiled, or in any way unfit for food, and it shall be the duty of the owner of such tainted or spoiled meat, fish, oysters, or other articles, to immediately remove the same outside the city limits.

The meat and milk inspector shall, at least once a day, after a careful inspection of all meat, fish, oysters, and other articles in the city market, and at such times as the commissioner of public safety may direct, in all the other markets, give to the occupants a certificate that the articles in their stalls have been found good for food, which said certificate shall be dated and shall be good for only one day in the city market and for the date fixed on said certificate in other markets, and he shall make a daily report to the commissioner of public safety, giving the names of occupants of stalls as well as the condition of the stalls and articles of food offered for sale therein.

Sec. 377. It shall be the duty of the meat and milk inspector, at the time other inspections are made, to carefully examine all refrigerators, ice boxes, fish boxes, scoops, counters, meat blocks, meat racks, cutting tools and all other articles that come in contact with the articles sold in said stall or markets or used in connection therewith, or about the said stalls or premises, and to see that the same are at all times kept in a clean, sanitary condition and make daily report of such inspection to the commissioner of public safety as hereinbefore provided. Whenever any tools or fixtures or other articles hereinbefore enumerated shall be found in an unsanitary condition it shall be the duty of the meat and milk inspector to post in some conspicuous place in or on said stall or place a card on which shall be printed in bold type the words: "This place condemned and closed," which said card shall remain posted and all sale of goods prohibited until the occupant of said stall or market place shall cleanse or remove as directed by said inspector such articles as may be condemned.

Sec. 378. That the occupants of the stalls or markets shall not hang or expose any meat or other products in such a way as that they will touch the floors or walls of the building or be exposed to flies or dirt or other sources of contamination, and no meat or other articles of food shall be placed on any counter, block or rack without being properly screened or protected from dirt, flies, and other sources of contamination; provided, this shall not apply to meat or other food products while being cut for sale or while being actually shown to a customer.

Sec. 379. That no person shall take into the city market, or any market owned, rented or leased by the city, any wheelbarrow or other vehicle or thing calculated to obstruct the free passage therein or on the pavements thereof, except such trucks as may be furnished by the city.

No occupant shall place or allow to remain in any stall in the city market, or in any market owned, rented or leased by the city, any fixtures, furniture, or tools unless same have been approved by the commissioner of public safety and it shall be unlawful for any occupant or employee to carry into or allow to remain in any stall in the city market, or any market owned, rented or leased by the city, any article except such fixtures, furniture and tools as have been approved by the commissioner of public safety and such articles of food as are kept for sale in said stalls.

That no rugs, racks, slats or carpets or floor covering of any description shall be allowed on the floor of any stall or market owned, leased or rented by the city, except fresh, clean sawdust, which shall be removed and replaced with fresh, clean sawdust at least once per week, and at such other times as the market keeper may direct.

Sec. 380. That the market keeper shall daily cleanse all passageways and vacant spaces in the city market, and shall, at such times as the commissioner of public safety may direct, cleanse all walls, posts, windows, ceilings and other places in said city market and pavements inside and around same.

That it shall be the duty of the market keeper to prevent all riotous and boisterous talking in the city market or on the walks or pavements around same, and he shall allow no idlers, loungers, peddlers, or disorderly persons to remain in, around, or about the premises.

Sec. 381. Any person violating any provision of this chapter shall be subject to a penalty of $50, and if any occupant of any stall in the city market or any other market owned, rented, or leased by the city shall violate any provision of this chapter the commissioner of public safety may at once eject him from such market and declare his contract of rental canceled. All contracts of rental shall be made subject to the provisions of this chapter.

[Ordinance adopted July 11, 1911, to replace secs. 369 to 382a, inclusive, of the city ordinances.]

HOLLAND, MICH.

FOODSTUFFS—PROTECTION AND SALE.

Rule 9. It shall not be lawful for any vender of meats, poultry, fish, vegetables, fruits, candy, or confectionery to expose the same on the outside of markets, stalls, or streets, or in open windows or doorways, unless constantly protected from dirt, dust, filth, flies, and any injurious substance; it is also required that all fish and poultry intended for sale in the city of Holland shall be drawn and properly cleaned immediately after being killed.

Rule 10. It shall be unlawful for anyone to sell or offer for sale any tainted, unwholesome, or diseased meats, fish, poultry, or products of the same, nor shall such or other meats, fish, or poultry be treated chemically or otherwise to disguise or overcome signs or appearance of taint.

The health officer and city inspector, or any member of the board of health, may seize and confiscate any such tainted, unwholesome, or diseased meats, fish, poultry, or products of the same, or any meats, fish, or poultry which have been so treated.

The health officer, city inspector, or any member of the board of health may affix or cause to be affixed to such meats, fish, or poultry which is tainted, diseased, or unwholesome, or to any receptacle or package containing the same, a card or tag, stating that same has been condemned and the reason therefor.

RULE 11. Every butcher and market man shall keep the floor, blocks, counters, locker, utensils, and every part of his market and premises clean and free from all filth and dirt and flies.

RULE 12. Every baker and confectioner, and every dealer in baked goods and confectionery, shall keep his cases, counters, tables, and utensils, shelves, and every part of his place of business clean; and shall protect all such baked goods and confectionery from dust, dirt, flies, and all manner of filth until delivered to the customer.

[Regulations board of health, adopted Oct. 2, 1911.]

LOUISVILLE, KY.

FOODSTUFFS—RAILROAD COMPANIES AND OTHER CARRIERS TO GIVE NOTIFICATION OF SHIPMENTS INTO CITY OF FRESH OR COLD-STORAGE MEATS OR FISH.

SECTION 1. That all railroad companies and other carriers be required to notify the health department of the city of Louisville upon bringing into the limits of the city of Louisville for delivery any fresh or cold-storage meats or fish intended for human consumption; and it shall be unlawful for any such railroad company or carrier to permit any consignee, or other person, to take possession or control of any such meats or fish until such railroad company or carrier has first notified said health department of the city of Louisville as herein required, and given the health department three hours time between 9 o'clock a. m. and 4 o'clock p. m. within which to inspect said meats or fish.

SEC. 2. Should said meat or fish be unwholesome or unfit for human consumption, then the health officer shall take the proper steps to have same destroyed. Should said meat or fish be found to be wholesome and fit for human consumption, then said health officer may in his discretion place a stamp thereon indicating such to be the case.

SEC. 3. Any railroad company or other carrier violating section 1 of this ordinance shall be deemed guilty of a misdemeanor and on conviction shall be fined not less than $50 nor more than $100 for each offense.

[Ordinance adopted Aug. 8, 1911.]

ORANGE, N. J.

FOODSTUFFS—PROTECTION OF FROM FLIES, DOGS, ETC.

1. The term "food" as used in this ordinance and the ordinance to which this is a supplement and in any ordinances amendatory thereof and supplemental thereto shall be construed to include every article used as food by man, and every ingredient in such article and milk and all milk products and all kinds of confectionery.

* * * * * * *

8. All public dining rooms, restaurants, and lunch rooms, and kitchens connected therewith, bakeries, confectioneries, ice-cream factories and saloons, meat and fish markets, delicatessens, soda fountains, and places where milk is bottled or exposed, shall, during the season when flies are prevalent, be screened so as to exclude flies therefrom; provided, however, that any other method by which the foods intended for consumption may be properly protected against flies may, by written permit of the health officer, be used in such places in lieu of screens.

9. All fruit, vegetables, and other food stored or exposed for sale upon any sidewalk or outside of any building in the city of Orange shall be placed upon stands, tables, or other structures having a height of at least 2 feet above the sidewalk or ground, unless said food is covered or inclosed in a manner approved by this board so as to be inaccessible to dogs.

10. Apples, peaches, pears, apricots, plums, grapes, cherries, figs, dates, cut melons, coconut meat, confectionery, bakery products, fish and meat, and all foods which are usually eaten raw and without the removal of the skin, rind, husk, or other natural external coverings, shall while in process of preparation, transportation, storage, or exposure for sale, be thoroughly protected against flies, either by proper coverings, containers, or cases, or by being kept within a store, booth, or other place free from flies. All beverages and the glasses, cups or vessels from which they are drunk shall be similarly protected from flies.

[Ordinance, board of health, adopted Oct. 2, 1911, as a supplement to the Sanitary and Plumbing Code adopted Dec. 1, 1900.]

WILMINGTON, N. C.

SOFT DRINKS—PREPARATION AND SALE.

SECTION 1. The water used for filling soda-water tanks, making bottled soft drinks, or for mixing any and all soft drinks to be sold at public vending places of all sorts, must be supplied from deep-bored wells which have been subjected to the supervision of the department of health, sterile bottled water or water that has been boiled for more than twenty minutes.

SEC. 2. Water used for washing glasses, bottles, or other vessels in which soft drinks are dispensed, must be from some source which is known to be uncontaminated by the health department, or boiled water, or a flowing stream from a tap. No tank, tub, or other vessel shall be used for washing these vessels in any case. No water shall be used the second time for washing these vessels.

SEC. 3. Glasses, bottles, and other vessels in which drinks are served must be allowed to drain thoroughly before using again.

SEC. 4. All surfaces on the fountain and counter, draining board, ice box, and wherever the drinks served may become contaminated must be kept scrupulously clean at all times.

SEC. 5. Twice each week all tanks and pipe coils shall be flushed out with a solution of hypochlorite of lime of the strength of 1 teaspoonful to 5 gallons of water. This solution to be washed out of the tanks and coils with a quantity of the water used in dispensing drinks.

SEC. 6. Fruits, sirups, cream, and ice cream used in preparing soft drinks shall be kept in containers which are washed with boiling water each time before filling, and kept in such place as to avoid possible contamination of their contents at all times.

SEC. 7. Spoons must be washed immediately after use and wiped dry. They must be kept in a clean, dry receptacle until used again.

SEC. 8. Flies must be excluded from all places where soft drinks are sold. Every substance in which flies can breed and upon which flies may feed must be protected from them. All refuse must be kept in a tightly covered metal receptacle, the contents of which must be removed daily.

[Ordinance adopted July 1, 1911.]

CEREBROSPINAL MENINGITIS.

TEXAS.

Surg. Guiteras reports the occurrence of 10 cases of cerebrospinal meningitis with 2 deaths at Galveston during the period from March 13 to 19, 1912.

The health officer at San Antonio reports 11 cases with 4 deaths as occurring at that place during the week ended March 9, 1912.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FROM FEB. 17 TO MAR. 9, 1912.

Place.	Week ended Feb. 24.		Week ended Mar. 2.		Week ended Mar. 9.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Baltimore, Md	1	1				1
Boston, Mass		2	1	1		
Chicago, Ill		1	1	1		
Chicopee, Mass					1	
Cincinnati, Ohio	6	1	4		1	
Cleveland, Ohio		1				
Columbus, Ohio					1	
Dayton, Ohio				1		
El Paso, Tex					2	
Haverhill, Mass					1	
Houston, Texas					8	4
Kansas City, Kans	5					
Kansas City, Mo	15	13			32	14
Montclair, N. J	1					
Nashville, Tenn			1		3	1
New Orleans, La	2	2			5	6
New York, N. Y	6	2	9	6	9	5
Niagara Falls, N. Y	1					
Oakland, Cal	1					
Oklahoma City, Okla					2	
Philadelphia, Pa	2	1				
Pittsburgh, Pa	1					
Reading, Pa					1	
Richmond, Va		1				
St. Louis, Mo	3	1	1		1	1
San Antonio, Tex			1		11	4
San Francisco, Cal		3	1	2	1	
Saratoga Springs, N. Y					1	
Schenectady, N. Y					1	1
Seattle, Wash					1	
Springfield, Ill						1
Waltham, Mass	1					
Washington, D. C					1	1
Worcester, Mass			1	1		

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,379 acres of land in Alameda County were covered with poison during the week ended March 9, 1912.

During the same period 8,500 acres of land in San Joaquin County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	March 9, 1911	2	[1] 185	98	
Oakland	do	8	[2] 737	578	
San Francisco	do	9	[3] 1,826	1,247	
Washington:					
City—					
Seattle	do		933	897	

[1] Identified: Mus norvegicus 101, Mus rattus 1, Mus musculus 83.
[2] Identified: Mus norvegicus 592, Mus rattus 1, Mus musculus 143, Mus alexandrinus 1.
[3] Identified: Mus norvegicus 807, Mus rattus 200, Mus musculus 553, Mus alexandrinus 266.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the State authorities.

SMALLPOX IN THE UNITED STATES—Continued.

REPORTS RECEIVED DURING WEEK ENDED MAR. 29, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Indiana:				
Counties—				
Bartholomew	Feb. 1-29	36	1	
Boone	do	2		
Cass	do	8		
Clinton	do	1		
Daviess	do	1		
Dearborn	do	27		
Fayette	do	40		
Fountain	do	7		
Gibson	do	1		
Grant	do	1		
Hendricks	do	2		
Johnson	do	13		
Madison	do	2		
Pike	do	25		
Rush	do	4		
St. Joseph	do	2	1	
Tipton	do	5		
Union	do	2		
Vanderburg	do	1		
Wells	do	1		
Total for State		181	2	
*Louisiana:				
New Orleans	Mar. 10-16	12		
Maine				Reports for September, October, and November not received.
Counties—				
Androscoggin	Dec. 1-31	52		
Oxford	do	1		
Sandahoc	do	3		
Total for State		56		
Androscoggin	Jan. 1-31	50		
Cumberland	do	19		
Kennebec	do	2		
Penobscot	do	1		
Sandahoc	do	2		
Total for State		74		
Minnesota:				
Counties—				
Anoka	Feb. 1-26	2		
Becker	Feb. 1-5	3		
Beltrami	do	4		
Brown	Feb. 1-19	6		
Chisago	Feb. 1-5	1		
Dodge	Feb. 13-19	4		
Fillmore	do	2		
Hennepin	Feb. 1-26	36		
Lac qui Parle	do	14		
Le Sueur	do	6		
Meeker	Feb. 1-5	1		
Nicollet	do	1		
Norman	Feb. 13-19	1		
Olmstead	do	2		
Otter Tail	do	8		
Ramsey	Feb. 1-26	101		
St. Louis	Feb. 1-5	11		
Scott	Feb. 13-26	2		
Sherburne	Feb. 20-26	6		
Stearns	do	1		
Swift	Feb. 6-12	1		
Todd	Feb. 1-5	1		
Wabasha	Feb. 6-13	1		
Washington	Feb. 1-19	2		
Wantonwan	Feb. 6-12	1		
Winona	Feb. 6-26	6		
Total for State		224		
Oklahoma:				
Counties—				
Adair	Jan. 1-31	3		
Bryan	do	4		
Comanche	do	1		
Delaware	do	137		
Garvin	do	4		
Grady	do	1		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended Mar. 29, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Oklahoma—Continued.				
Counties—Continued.				
Logan	Jan. 1-31	1		
McCurtain	do	2		
Mayes	do	5		
Nowata	do	1		
Oklahoma	do	2		
Osage	do	11		
Pittsburg	do	11		
Woodward	do	1		
Total for State		184		
Oregon:				
Counties—				
Baker	Jan. 1-31	23		
Benton	do	27		
Clackamas	do	1		
Douglas	do	5		
Lane	do	1		
Lincoln	do	1		
Linn	do	1		
Malheur	do	1		
Marion	do	8		
Umatilla	do	4		
Washington	do	2		
Total for State		74		
*South Carolina:				
Charleston	Feb. 1-29	2		
*Tennessee:				
Knoxville	Mar. 10-16	1		
Virginia:				
Counties—				
Elizabeth	Feb. 1-29	1		
Hanover	do	1		
Henrico	do	1		
Mecklenburg	do	14		
Middlesex	do	4		
Nansemond	do	7		
Norfolk	do	7		
Roanoke	do	9		
Russell	do	12		
Southampton	do	10		
Wise	do	6		
Total for State		72		
Grand total for the United States		880	2	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAR. 9, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	237	23	....	8	....	20	1	....	....	23	38	5	1
Boston, Mass	670,585	298	29	3	161	5	22	2	....	....	54	33	....	....
Chicago, Ill	2,185,283	678	136	12	144	2	173	10	....	....	174	104	18	3
Cleveland, Ohio	560,663	161	18	2	48	1	45	2	....	....	25	18	4	....
New York, N. Y	4,766,883	1,608	274	34	1,544	17	444	24	....	....	499	197	26	5
Philadelphia, Pa	1,549,008	544	67	13	31	....	63	1	....	....	74	52	17	3
St. Louis, Mo	687,029	248	24	4	31	....	14	....	....	....	35	26	4	1
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	139	17	1	47	....	13	2	....	....	13	17	2	....
Cincinnati, Ohio	364,463	132	7	2	6	....	41	1	....	....	54	23	1	....
Detroit, Mich	465,766	185	21	2	....	....	37	1	5	....	....	....	....	....
Los Angeles, Cal	319,198	104	13	1	2	....	15	....	3	....	12	21	3	....
Milwaukee, Wis	373,857	92	11	1	37	....	26	3	....	....	8	4	18	4
Newark, N. J	347,469	115	32	1	....	1	20	....	....	....	26	12	1	....
New Orleans, La	339,075	159	7	1	4	....	9	....	16	....	42	25	1	....
San Francisco, Cal	416,912	122	5	2	241	3	2	....	....	....	11	12	3	1
Washington, D. C	331,069	122	9	1	16	....	5	1	....	....	26	9	4	....
Cities having from 200,000 to 300,000 inhabitants.														
Jersey City, N. J	267,779	80	....	....	....	....	....	....	....	....	....	15	....	....
Kansas City, Mo	248,381	29	4	....	5	....	5	....	2	....	6	5	2	2
Providence, R. I	224,326	73	13	2	26	4	8	....	....	....	2	7	....	....
Seattle, Wash	237,194	59	....	....	1	....	1	....	1	....	9	4	4	1
Bridgeport, Conn	102,054	29	1	1	1	....	12	....	....	....	....	2	....	....
Cambridge, Mass	104,839	36	8	....	4	....	4	....	....	....	3	4	....	....
Columbus, Ohio	181,548	47	8	1	71	1	14	....	....	....	1	4	1	....
Dayton, Ohio	116,577	31	3	1	4	....	....	....	3	....	....	4	1	1
Fall River, Mass	119,295	45	7	1	1	....	1	....	....	....	9	5	....	....
Grand Rapids, Mich	112,571	28	4	....	2	....	8	....	....	....	4	4	12	3
Lowell, Mass	106,294	32	....	....	28	2	8	....	....	....	1	2	5	....
Nashville, Tenn	110,364	47	....	....	....	....	1	....	....	....	3	5	1	....
Oakland, Cal	150,174	47	....	....	6	....	2	....	....	....	4	5	....	....
Omaha, Nebr	124,096	24	5	....	1	....	....	....	1	....	....	1	....	....
Richmond, Va	127,628	65	3	....	33	....	3	....	3	....	4	8	....	....
Spokane, Wash	104,402	....	1	....	63	....	1	....	25	....	2	2	2	....
Toledo, Ohio	168,497	51	6	....	26	....	3	....	....	....	....	7	....	1
Worcester, Mass	145,986	55	4	....	2	....	8	1	....	....	4	2	1	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	19	2	....	....	....	....	....	....	....	2	....	....	....
Bayonne, N. J	55,545	25	5	1	1	....	5	....	....	....	5	6	....	1
Brockton, Mass	56,878	16	....	....	103	....	3	....	....	....	1	....	....	....
Camden, N. J	94,538	....	4	1	1	....	3	....	....	....	5	3	....	....
Elizabeth, N. J	73,409	23	3	1	1	....	7	....	....	....	....	5	1	....
Erie, Pa	66,525	19	7	....	....	....	5	1	....	....	....	2	2	....
Evansville, Ind	69,647	28	3	....	1	....	1	....	1	....	2	3	8	1
Fort Wayne, Ind	63,933	22	....	....	4	....	2	....	....	....	....	1	1	....
Harrisburg, Pa	64,186	32	2	....	59	....	....	....	3	....	9	3	....	....
Hartford, Conn	98,915	60	8	1	1	....	11	....	....	....	3	2	....	....
Hoboken, N. J	70,324	35	2	....	....	....	....	....	....	....	8	....	....	....
Houston, Tex	78,800	37	2	....	....	....	1	....	3	....	....	1	....	....
Johnstown, Pa	55,482	19	1	2	1	....	....	....	....	....	....	....	1	....
Lawrence, Mass	85,892	36	....	....	....	....	....	....	....	....	4	2	1	....
Lynn, Mass	89,336	31	1	....	5	....	11	....	1	....	5	1	....	....
Manchester, N. H	70,063	30	2	....	5	....	1	....	....	....	4	4	....	....
New Bedford, Mass	96,652	....	2	1	21	....	2	....	....	....	6	3	1	....
Oklahoma City, Okla	64,205	14	2	....	....	....	....	....	1	....	....	1	1	....
Passaic, N. J	54,773	17	2	....	9	....	....	....	....	....	2	1	1	....
Portland, Me	58,571	24	2	....	....	....	1	....	....	....	....	1	....	....
Reading, Pa	96,071	26	2	....	1	....	3	....	....	....	1	4	3	....
Saginaw, Mich	50,510	....	8	1	....	....	....	....	....	....	....	....	5	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Mar. 9, 1912—Con.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Con.														
San Antonio, Tex	96,614	43	2	1	12		1		1			7	3	
Schenectady, N. Y	72,826	29			29						1	6		
South Bend, Ind	53,684	20							5			3		
Springfield, Ill	51,678	11	3				1		1			1	1	
Springfield, Mass	88,926	27	2	2	31						1		1	
Trenton, N. J	96,815	41	3	1							7	5	2	1
Wilkes-Barre, Pa	67,105	25	3		12						3	2		
Wilmington, Del	87,411	34										4		
Yonkers, N. Y	79,803	20	5	1	4		6				2	2		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150		1		2		1				2			
Aurora, Ill	29,807	6	2		1									
Berkeley, Cal	40,434	6			9		1				2			
Binghamton, N. Y	48,443	14			2						3	2		
Brookline, Mass	27,792	7			4		2				1			
Chattanooga, Tenn	44,604								1		1			
Chelsea, Mass	32,452	10										2	1	
Chicopee, Mass	25,401	4				1	1				2			
Danville, Ill	27,871	11	1											
East Orange, N. J	34,371	10	1		3		4						1	
Elmira, N. Y	37,176	10	2									2		
El Paso, Tex	39,279	22					3	1				4		
Everett, Mass	33,484	11			3						1	1		
Fitchburg, Mass	37,826	9	1		1						1			
Haverhill, Mass	44,115	12			15		4				5		1	
Kalamazoo, Mich	39,437	18	1		1		8		7		3	2		
Knoxville, Tenn	36,346	18	1		1				2		1	8		
La Crosse, Wis	30,417	9					2				1	2		
Lancaster, Pa	47,227		1		47		2				1			
Lexington, Ky	35,099	15			4						1	2		
Lima, Ohio	30,508	3	1											
Lynchburg, Va	29,494	12			39		2							
Malden, Mass	44,404	7			5		4				1		1	
Montgomery, Ala	38,136	22	1		14							4		
Newcastle, Pa	36,280		6								3		4	
Newport, Ky	30,309	9					4							
Newton, Mass	39,806	10	1		19									
Niagara Falls, N. Y	30,445	11	3	1	1							2		
Norristown, Pa	27,875	14	3	1	61		3							
Orange, N. J	29,630	7	1		2		3				1	1		
Pasadena, Cal	30,291	20					2					5		
Portsmouth, Va	33,190	9							6					
Racine, Wis	38,002	8	4									2		
Roanoke, Va	34,874	15	2		19								1	1
Rockford, Ill	45,401	11	1									1	104	
Salem, Mass	43,697	15	1				1							
San Diego, Cal	39,578	9			4		1				4	4		
South Omaha, Nebr	26,259	12					3	2			1	1		
Superior, Wis	40,384	9	1						3					
Taunton, Mass	34,259	15			2						1	2		
Waltham, Mass	27,834	5			10		1							
West Hoboken, N. J	35,403		3		1		1						1	
Wheeling, W. Va	41,641	13									3		4	1
Williamsport, Pa	31,860	6	1										1	
Wilmington, N. C	25,748	18			4				5	1	2	2		
York, Pa	44,750		1				4				4			
Zanesville, Ohio	28,026	11	1									1	3	
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,383	4			1									
Beaver Falls, Pa	12,191	1					2						6	
Braddock, Pa	19,957	10	2											
Butler, Pa	20,782	6									1			
Cambridge, Ohio	11,327	6			1								1	
bondale, Pa	17,040	8			10		7							

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Mar. 9, 1912—Con.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants—Contd.														
Clinton, Mass	13,075	1			1									
Coffeyville, Kans	12,687		1											
Columbus, Ga	20,554	3												
Columbus, Ind		7							2					
Concord, N. H	21,497	12			5									
Cumberland, Md	21,839	8			2		2				1	1	6	
Dunkirk N. Y		7												
Galesburg, Ill	22,089	13										3		
Gloucester, Mass	24,398	6												
Harrison, N. J	14,498	2	1		1		2						1	
Kearny, N. J	18,659	5	1		11		1				1			
Kokomo, Ind	17,010	6	1		1				2			1		
La Fayette, Ind	20,081	11			4		1					1		
Lebanon, Pa	19,240		2											
Logansport, Ind	19,050	9	1						1			1		1
Marinette, Wis	14,610	4					1						2	
Marlboro, Mass	14,579	9												
Massillon, Ohio		4									2			
Medford, Mass	23,150	7	2		6		1						1	
Melrose, Mass	15,715	5			8		1							
Moline, Ill	24,199	8											1	
Montclair, N. J	21,150	5	1		3						1			
Morristown, N. J	12,507	4									1			
Nanticoke, Pa	18,507	6			3									
Newburyport, Mass	19,240	5									1			
North Adams, Mass	22,012	3			2						2			
Northampton, Mass	19,431	11	1		2		1				1	3		
Ottumwa, Iowa	22,012	6					1					1		
Palmer, Mass		2												
Peekskill, N. Y		2	3								2			
Plainfield, N. J	25,050	6			29		3				2			
Pottstown, Pa		6	1		9		1					1		
Sandusky, Ohio	19,989	9	1		14							1		
Saratoga Springs, N. Y		6												
Steelton, Pa	14,246	5	3	1		1			1		1			
Warren, Ohio	11,081	4	2				3					1		
Wilkinsburg, Pa	18,924	12					1				1	3		
Woburn, Mass	15,308	1			5									

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

CALIFORNIA.—Month of August, 1911. Population 2,377,549. Total number of deaths from all causes 2,577, including diphtheria 6, measles 5, scarlet fever 1, tuberculosis 371, typhoid fever 33.

MASSACHUSETTS.—Week ended January 6, 1912. Population of reporting towns 2,593,485. Total number of deaths from all causes 720, including diphtheria 15, measles 5, scarlet fever 2, tuberculosis 60, typhoid fever 5. Cases reported: Diphtheria 176, measles 296, scarlet fever 149, smallpox 1, tuberculosis 144, typhoid fever 28.

Week ended January 13, 1912. Total number of deaths from all causes 817, including diphtheria 11, measles 3, scarlet fever 2, tuberculosis 86, typhoid fever 5. Cases reported: Diphtheria 126, measles 311, scarlet fever 152, tuberculosis 130, typhoid fever 17.

Week ended January 20, 1912. Population of reporting towns 2,577,441. Total number of deaths from all causes 866, including diphtheria 5, measles 2, tuberculosis 82, typhoid fever 3. Cases reported: Diphtheria 117, measles 140, scarlet fever 130, smallpox 2, tuberculosis 105, typhoid fever 14.

Week ended January 27, 1912. Population of reporting towns 2,593,485. Total number of deaths from all causes 805, including diphtheria 18, measles 2, scarlet fever 1, tuberculosis 68, typhoid fever 3. Cases reported: Diphtheria 100, measles 421, scarlet fever 152, smallpox 2, tuberculosis 124, typhoid fever 21.

NEW YORK.—Month of January, 1912. Population 9,113,614. Total number of deaths from all causes 12,919, including diphtheria 172, measles 58, scarlet fever 68, smallpox 1, tuberculosis 1,387, pulmonary 1,228, typhoid fever 107. Cases reported: Diphtheria 1,852, measles 4,814, scarlet fever 1,878, smallpox 178, tuberculosis, pulmonary, 2,520, typhoid fever 472.

FOREIGN AND INSULAR.

BRAZIL.

Bahia—Yellow Fever.

The American consul reported March 23 the presence of yellow fever at Bahia.

ECUADOR.

Guayaquil—Plague and Yellow Fever.

The following statement of plague and yellow fever in Guayaquil and vicinity was received from Passed Asst. Surg. Parker:

MONTH OF FEBRUARY, 1912.

Plague.—This disease gradually and naturally diminishes at this season of the year, when the heavy rains and heat are unfavorable to its propagation. From the month of January there remained 24 cases of plague under treatment. During the month of February there were reported 22 new cases, with 10 deaths. Duran furnished one case, the only case which was reported outside of Guayaquil.

Yellow fever.—Owing to the entrance into Guayaquil of a large number of nonimmune troops from the interior after the capitulation of January 22, 1912, the prevalence of yellow fever increased markedly and cases occurred throughout the city. The actual number of cases is not known, as the troops remained only a few days and were then returned to the interior. While en route probably 200 cases developed along the railway line, most of which terminated fatally. In Guayaquil there were reported 14 cases as existing from the previous month and 98 new cases, with 43 deaths. Most of these cases occurred among the native population, but a number of foreigners were also attacked.

Yellow fever also appeared along the line of railway as far as Huigra at an elevation of 4,000 feet, where one case originated. Duran, Yaguachi, Milagro, Naranjito, and Bucay, small towns along the route, are also infected.

The following table shows the reported prevalence of plague and yellow fever during the month of February:

	Previously existing.	New cases.	Cured.	Died.	Remaining.
Plague:					
Guayaquil	24	22	32	10	4
Duran		1			1
Yellow fever:					
Guayaquil	14	98	47	43	22
Duran	3	10	9	4	
Yaguachi	1	1	1		1
Milagro	3	8	3	6	2
Naranjito	1	2	1	2	
Bucay		5	3	2	
Huigra		1	1		

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended February 3, 61 deaths from cholera and 23 from plague were reported at Calcutta; in all Bengal, 2,431 cases of plague with 2,049 deaths; in all India, 16,082 cases of plague with 13,789 deaths.

ITALY.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo, week ended March 2, 1912.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Feb. 28	Canopic	Boston	961	120	[illegible]
28	Ancona	Philadelphia	1,715	230	[illegible]
29	Perugia	New York	352	40	[illegible]
Mar. 1	Prinzess Irene	do	846	130	[illegible]
	Total		3,874	520	[illegible]

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Feb. 25	Sant' Anna	New York	450	350	[illegible]
27	Ancona	Philadelphia	234	175	[illegible]
28	Themistocles	New York			
28	Alice	do			
29	Canopic	Boston	52	150	[illegible]
Mar. 1	Perugia	New York	148	75	[illegible]
2	Prinzess Irene	do	176	140	[illegible]
	Total		1,060	890	[illegible]

SOUTH AFRICA.

Plague at Durban, Natal.

Consul Stewart, at Durban reports: A death from plague occurred at Durban February 11, making a total of 5 cases with 4 deaths at this port to date.

The first case of plague at Durban was reported January 14.

VENEZUELA.

Yellow Fever at Caracas.

Acting Asst. Surg. Stewart at La Guaira reports: From February 1 to 15, 5 deaths from yellow fever were officially reported at Caracas

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING THE WEEK ENDED MAR. 29, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Jan. 26-Feb. 3	39	32	
Calcutta	Jan. 28-Feb. 3		61	
Madras	Feb. 11-17	39	27	
Negapatam	Jan. 26-Feb. 3		4	
Rangoon	Dec. 1-31	56	49	
Indo-China:				
Saigon	Jan. 26-Feb. 12	75	57	
Straits Settlements:				
Singapore	Jan. 27-Feb. 3	1	1	
Turkey in Asia:				
Aleppo	Feb. 25-Mar. 2	1	1	

YELLOW FEVER.

Brazil:				
Bahia	Mar. 23			Present.
Manaos	Feb. 11-24		9	
Ecuador:				
Bucay	Feb. 1-29	5	2	
Duran	do	10	4	
Guayaquil	do	98	43	
Huigra	do	1		
Milagro	do	8	6	
Naranjito	do	2	2	
Yaguachi	do	1		

PLAGUE.

China:				
Hongkong	Feb. 4-10	4	4	
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	do	22	10	
India:				
Calcutta	Jan. 28-Feb. 3		23	
Karachi	Feb. 11-17	25	22	
Rangoon	Dec. 1-31	12	11	
Indo-China:				
Saigon	Jan. 26-Feb. 12	4		
Java:				
Pasoeroean Residency	Feb. 4-10	5	4	
Mauritius	Dec. 22-Jan. 11	8		
Persia:				
Buchir	Feb. 4-10	3	1	
	Feb. 18-24	10	3	
South Africa:				
Durban	Jan. 20-Feb. 11	3	2	
Straits Settlements:				
Singapore	Jan 25-Feb. 3	1	1	

SMALLPOX.

Arabia:				
Aden	Jan. 23-Feb. 26	11	4	
Austria-Hungary:				
Galicia	Feb. 18-24	1		
Canada:				
Fernie	Mar. 4-16	3		
Montreal	do	1		
Ottawa	do	15		
Windsor	do	1		
Ceylon:				
Colombo	Feb. 4-10	1		Vicinity.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended Mar. 29, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Chile:				
Iquique	Jan. 14-20	1	1	
China:				
Hongkong	Feb. 4-10	47	37	
Shanghai	Feb. 12-18		1	
Egypt:				
Cairo	Feb. 5-11	1		
France:				
Paris	Feb. 18-24	8		
Germany	Feb. 28-Mar. 9	6		
Great Britain:				
Southampton	Mar. 3-9	1		
India:				
Madras	Feb. 11-17	15	2	
Rangoon	Dec. 1-31	32	8	
Indo-China:				
Saigon	Jan. 26-Feb. 12	3		
Italy:				
Naples	Feb. 25-Mar. 2	6		
Palermo	Feb. 18-Mar. 2	166	67	
Japan:				
Nagasaki	Feb. 12-18	1		
Java:				
Batavia	Feb. 4-10	5	4	
Mexico:				
Guadalajara	Mar. 3-9	1		
Juarez	do	2		
Magdalena	Mar. 6-12		1	10 cases present.
Salina Cruz	Mar. 3-9	2	1	
Portugal:				
Lisbon	Jan. 26-Mar. 2	7		
Russia:				
Moscow	Feb. 4-10	4		
Spain:				
Seville	Feb. 1-29		3	
Valencia	Feb. 26-Mar. 2	22		
Straits Settlements:				
Singapore	Jan. 28-Feb. 3	1	1	
Turkey in Europe:				
Constantinople	Feb. 26-Mar. 3		7	

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAR. 22, 1912.

For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total Sept. 24-Dec. 23: Cases, 2,070; deaths, 1,508.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 22, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks
India:				
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bassein	Jan. 14-27	23	21	
Calcutta	Nov. 5-Jan. 27		427	
Madras	Nov. 26-Feb. 10	452	375	Madras Presidency, Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-31: Cases, 13,411; deaths, 8,509.
Negapatam	Jan. 14-27		65	
Rangoon	Oct. 1-Nov. 30	6	3	
Indo-China:				
Saigon	Nov. 20-Jan. 29	1,412	978	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade, district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Jan. 27		755	
Straits Settlements:				
Singapore	Nov. 5-18	3	3	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4; Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 5: Cases, 64; deaths, 77.
Acre	Jan. 21	7	6	In vicinity.
Adana	Dec. 2-6	16	5	
Aleppo	Jan. 26-Feb. 24	30	18	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 22, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Europe:				
Constantinople	Oct. 24–Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Ceara	Jan. 1-31		1	
Manaos	Nov. 19–Feb. 10		18	
Para	Dec. 9-16	1	1	
Pernambuco	Jan. 1-15		2	
Ecuador:				
Bucay	Nov. 16-30	2		
Duran	Dec. 1-15	3	2	
Guayaquil	Nov. 16–Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb. 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida	Nov. 12–Feb. 10	18	9	Total Aug. 1–Feb. 24: Cases, 63; deaths, 29.
Puerto Mexico (Coatzocoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16–Jan. 15	25	8	
La Guaira	Feb. 24-27	1		In the suburb Maiquetia.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24–Feb. 17	18	12	
Pernambuco	Oct. 16–Jan. 16		4	
Rio de Janeiro	Nov. 12–Dec. 23	6	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12–Jan. 6	10	4	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9–Feb. 3	16	13	
Dutch East Indies:				
Java				Total Mar. 1–Dec. 30: Cases, 1,517; deaths, 1,324.
Pasoeroean Residency, Malang District.	Nov. 12–Feb. 3	83	44	
Soerobaya	Oct. 17-27	2		
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Ecuador:				
Guayaquil	Nov. 16–Dec. 15	102	42	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 22, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1-Feb. 20	21	15	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	Jan. 1-Feb. 21	23	12	
Behera	Jan. 1-25	3	2	Sept. 11-16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16-21	5	2	
Fayoum	Jan. 1-26	1		
Galioubeh	Jan. 1-Feb. 18	2	2	Oct. 5-Dec. 26: Cases, 1.
Garbieh	Jan. 1-25	8	4	
Kena	Jan. 1-Feb. 22	11	9	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Minieh	Jan. 1-Feb. 1	3	2	Dec. 13: Cases, 1.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-Feb. 3	113	97	
Calcutta	Nov. 11-Jan. 27		87	
Karachi	Nov. 26-Feb. 10	76	67	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Nov. 30	38	39	
Bombay Presidency and Sind.	Oct. 29-Jan. 27	46,419	33,705	
Madras Presidency	do	7,157	5,622	
Bengal	do	10,325	7,878	
United Provinces	do	27,664	24,216	
Punjab	do	2,336	1,741	
Burma	do	566	494	
Eastern Bengal and Assam.	Jan. 1-6	1	1	
Central Provinces	Oct. 29-Jan. 27	11,481	9,027	
Coorg	do	86	50	
Mysore State	do	6,963	5,309	
Hyderabad State	do	19,267	17,731	
Central India	do	5,754	4,764	
Rajputana and Ajmere Merwara.	do	628	504	
North West Province	do	2	2	Total for India, Oct. 29-Jan. 27: Cases, 13,649; deaths, 111,044. Total, year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Jan. 22	23	2	
Mauritius	Nov. 3-Dec. 21	43	30	
Peru:				
Departments—				
Callao	Oct. 1-21	1		In November 1 case; in January 3 cases with 2 deaths.
Chiclayo	do	12	4	Trujillo.
Chosika	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Feb. 21, 34 cases in the lazaretto.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Jan. 27		3	
South Africa:				
Durban	Jan. 14-Feb. 11	5	4	
Straits Settlements:				
Singapore	Nov. 5-Jan. 27	20	19	
Turkey in Asia:				
Jiddah	Jan. 13-Feb. 2	6	1	

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Jan. 15	5	3	And vicinity.
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	Oct. 1-Nov. 30		31	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 22, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	1		
Budapest	Feb. 4-10	25		
Galicia	Dec. 24-30	1		
Krain	Jan. 14-20	7		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-20	1		
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 16-Jan. 15		388	Report for Oct. 1-15 not received.
Rio de Janeiro	Nov. 26-Jan. 20	4	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 2	2		
Nelson	Dec. 24-30	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-20	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Mar. 2	69		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-Feb. 10	2	1	
Windsor	Feb. 4-Mar. 9	7		
Quebec—				
Montreal	Dec. 17-Mar. 2	21		
Quebec	Dec. 10-Mar. 9	253	2	
Ceylon:				
Colombo	Nov. 12-Feb. 3	2		
Chile:				
Iquique	Dec. 10-16	2		
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		Feb. 17—Decreasing.
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chenghai	Jan. 29-Feb. 10			Present.
Chungking	Nov. 18-Jan. 20			Do.
Hankow	Jan. 21-Feb. 3	1	1	
Hongkong	Nov. 12-Feb. 3	250	181	
Kityang	Jan. 21-Feb. 3			Do.
Nanking	Dec. 10-Feb. 24			Do.
Shanghai	Dec. 11-Feb. 4	1	5	Deaths among natives.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-Jan. 14	3		
Port Said	Jan. 30-Feb. 4	1		
France:				
Marseille	Jan. 1-31		3	Nov. 1-30, 1 death.
Paris	Dec. 3-Feb. 17	77	5	
Germany				Total, Dec. 31-Feb. 24: Cases, 21.
Hamburg	Jan. 21-27	1		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
London	Jan. 14-Feb. 24	6	1	
West Hartlepool	Feb. 18-24	1		
India:				
Bombay	Nov. 19-Feb. 10	222	95	
Calcutta	Nov. 19-Feb. 6		19	
Madras	Nov. 26-Feb. 10	72	39	
Rangoon	Oct. 1-Nov. 30	29	9	
Indo-China:				
Saigon	Nov. 13-Jan. 29	25	1	
Italy:				
Genoa	Dec. 1-Jan. 31	33	2	
Leghorn	Dec. 16-Feb. 24	92	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-Feb. 24	76	1	
Palermo	Nov. 26-Feb. 17	2,279	766	
Turin	Jan. 15-Feb. 25	6		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 22, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	2	1	Jan. 20, 1 case from s. s. Suverio from Hongkong. Jan. 28, 1 case from Shingo Maru.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Java:				
Batavia	Nov. 12-Feb. 3	30	7	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Feb. 17	4	2	
Juarez	Dec. 19-Feb. 24	12	5	
Magdelena	Dec. 23-Feb. 24	91	49	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-Feb. 27		10	Mar. 16, 25 cases in the lazaretto
Mexico	Nov. 26-Jan. 20	61	33	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 9		33	
Salina Cruz	Feb. 11-17	2	1	
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Dec. 30	3	1	
Tampico	Dec. 1-Mar. 1		14	
Tapachula	Nov. 1-Dec. 31		14	
Portugal:				
Lisbon	Dec. 9-Feb. 24	38		
Russia:				
Batum	Dec. 1-31	1		
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Feb. 3	26	10	
Odessa	Nov. 26-Feb. 24	21	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-Jan. 27	16		Oct. 1-Nov. 30; deaths, 2.
St. Petersburg	Nov. 19-Feb. 3	122	22	
Warsaw	Nov. 5-Dec. 2		185	
Siam:				
Bangkok	Nov. 5-Jan. 27		1,326	
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-27	1		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Barcelona	Feb. 6-12		1	
Cadiz	Nov. 1-Jan. 31		22	
Madrid	Dec. 1-Jan. 31		3	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-31		5	
Valencia	Dec. 3-Feb. 24	199	11	
Straits Settlements:				
Singapore	Nov. 19-Jan. 27	21	7	
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Feb. 17		42	
Turkey in Asia:				
Beirut	Dec. 3-Feb. 24	1,005	87	
Turkey in Europe:				
Constantinople	Dec. 4-Feb. 25		80	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Feb. 24	163,084	49								1		2	1
Do	Mar. 2		53								2		1	
Aden	Jan. 29	45,859	36	3				1						
Do	Feb. 5-26		85	11				2						
Aix-la-Chapelle	Feb. 24	157,533	50	3								1		2
Aleppo	..do	200,000				3								
Do	Mar. 2					1								
Amsterdam	..do	501,993	152	19									1	2
Do	Mar. 9		136	17						1		1	1	3
Antwerp	Feb. 24	316,604	90	8							1			1
Do	Mar. 2		76	3								1	1	
Assuncion	Feb. 3	75,000	43	1						2				
Athens	Feb. 26	250,010	84	17								2	1	
Baracoa	Mar. 16	27,000	3							1				
Barcelona	Mar. 2	591,272	250	26						3		2		
Batavia	Feb. 10	217,630	7											
Belfast	Mar. 2	385,492	162	32										11
Belgrade	Feb. 24	90,050	35								1	1		
Do	Mar. 2		37							2	1			
Berlin	Feb. 17	2,087,814	731	89							8	15	6	4
Do	Feb. 24		715	98						1	7	21	7	2
Birmingham	Mar. 2	842,512	731								3	2	1	9
Bordeaux	Mar. 9	253,000	56	15								2	3	
Bradford	Feb. 17	289,618	102	4						1		2	1	
Do	Feb. 24		105	4								3	3	1
Do	Mar. 2		105	10						1		1	6	
Bremen	Feb. 17	246,850	77	9								3		5
Bristol	Mar. 2	359,400	110	5							1	1	6	
Brunswick	Feb. 17 Feb. 24	145,000		6							3	25		
Brussels	Mar. 2	739,684	197	21						1	1	2	5	2
Budapest	Feb. 17	1,000,000									7	2	3	1
Do	Feb. 24									2	4	4	3	
Cairo	Feb. 11	689,439	443	29					3	2	1	2		
Calcutta	Feb. 3	890,493	523	30	23	61							1	
Catania	Mar. 1	207,000	105	6							1	1	3	
Do	Mar. 8		102	2							2		3	1
Christiania	Mar. 2	246,000	76	8									4	
Coburg	Feb. 24	24,299	8									1		
Cologne	Feb. 27	526,639	174	17							2	2		3
Do	Mar. 2		148	12						1	1	4		4
Colombo	Feb. 10	227,026	137	15				[1] 1		11				
Constantinople	Mar. 3	1,000,000	334	42				7		3	6	1	6	
Copenhagen	Feb. 24	465,000	145	17							4	1		
Dalny	Feb. 17	45,209	15	2							1			
Do	Feb. 24		22	2						1	1			
Dresden	Feb. 10	555,900	190	26								2		
Do	Feb. 17		136	22							1	6		1
Do	Feb. 24		159	22								3		
Dublin	Mar. 2	406,536	205	32					1			3	5	3
Dundee	..do	171,006	64	4							1			2
Do	Mar. 9		50	6								1		
Edinburgh	Mar. 2	321,200	112	7								2	6	2
Georgetown	Feb. 24	57,577	51	5						2				
Glasgow	Mar. 8	785,600	318								2	4	27	4
Gothenburg	Feb. 24	170,100	69	18								2		1
Halifax	Mar. 9	46,000	10								2	1		
Do	Mar. 16		22	1								2		
Hamburg	Mar. 2	953,079	278	20							3	6	1	5
Harput	Feb. 10	21,000		1						2			3	
Do	Feb. 17			1						1			1	2
Havre	Mar. 2	136,159	70	6									2	
Hongkong	Feb. 10	336,488			4			37		1				
Iquique	Jan. 20	40,000		6						1				
Do	Jan. 27			7						1				
Juarez	Mar. 9	6,500	11	1										
Karachi	Feb. 17	148,000	123	22									12	

[1] In vicinity.

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Kobe	Feb. 18	418,646	127							3				
Do	Feb. 25		165								1	4		
Konigsberg	Feb. 24	252,000	106	11									2	1
Leeds	Mar. 2	445,568	104	9							2			5
Do	Mar. 9		133	16							3	3	1	3
Leghorn	Mar. 2	104,000	37											
Leipzig	Feb. 24	605,755	138	23								2		1
Libau	Feb. 25	84,000										3		
Liverpool	Mar. 2	752,055	264	26							1	1		2
Do	Mar. 9		244	22							1	2	2	2
London	Mar. 2	7,340,125	1,810	43						3	5	28	16	
Lubeck	Feb. 24	100,000	37	2						1				1
Do	Mar. 2		35	4						1		2		
Madras	Feb. 17	518,660	401			27		2		1			3	
Magdeburg	Jan. 27	285,674	108	6							1			
Do	Feb. 3		115	7							1	5		1
Do	Feb. 10		112						2			5		1
Manaos	Feb. 17	52,000	51	4			5							
Do	Feb. 24		2				4							
Manchester	..do....	543,969	297	17						1		1	10	17
Do	Mar. 2		286	22						4	2	2	30	5
Mannheim	Feb. 17	200,000	37	6										
Do	Feb. 24		33	4									2	
Mazatlan	Mar. 12	22,000	21	1						1				
Montreal	Mar. 16	466,197	165	18						1		2		2
Moscow	Feb. 10	1,500,000	794	113					3		32	11	29	5
Do	Feb. 17		775	115					1		12	15	24	3
Munich	..do....	610,000	173	30						2		2	2	2
Do	Feb. 24		176	35									1	
Nagasaki	Feb. 18	179,257	41	6								1		
Do	Feb. 25		35	5						2				
Nagoya	Feb. 3	420,673	156							1		1		
Do	Feb. 10		145							2	1			
Nottingham	Feb. 24	260,000	74	6							1	1	8	1
Odessa	Jan. 27	575,000	196	30						4	4	3	4	2
Do	Feb. 10		174	36					7		2	3		1
Do	Feb. 17		175	25					3		1	1		1
Do	Feb. 20		193	17							2	4	3	1
Do	Feb. 24		170	26					1	1		3	1	1
Newcastle on Tyne	Mar. 2	269,193	72	7								2		1
Nottingham	..do....	260,000	66	4						1			6	
Ottawa	Mar. 16	90,000	31	2								1		
Palermo	Feb. 24	340,000	179	5				36	1		1	1		
Do	Mar. 2		177	10				31				1		
Para	..do....	185,000	85	11	4									
Paris	Feb. 24	2,888,110	1,044	312	9					6		5	39	
Prague	..do....	225,204	94	12						1		3	4	1
Progreso	Mar. 9	6,959	9							1				
Rangoon	Feb. 10	293,316	193		11	12		7						
Saigon	Feb. 5	220,000				25								
Do	Feb. 12					32								
Salina Cruz	Mar. 9	6,138						1						
St. Petersburg	Feb. 24	907,708	825	136				4	1	17	21	13	39	10
Santa Cruz de Teneriffe	..do....	46,000	10					1						
Shanghai	Feb. 18	500,000	184	10				1			6	3	16	
Do	Feb. 25		185	15							2	1	27	
Sheffield	Feb. 17	455,000	164	5						2			1	12
Do	Mar. 8		161	10						1	1	1		13
Singapore	Feb. 3	303,328	182	33	1			1						
Southampton	Mar. 9	120,891	27	3										4
Stettin	Feb. 24	237,000	101	8								3		
Do	Mar. 2	240,000	93	10								3		
Stockholm	Feb. 17	343,832	99	19								2	9	2
Vienna	..do....	2,064,583	661	101							4	7	4	3
Do	Feb. 24		652	99						1	5	2	13	2

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

ALGERIA—*Algiers.*—Month of February, 1912. Population, 172,397. Total number of deaths from all causes 320, including diphtheria 4, tuberculosis 48, typhoid fever 5.

BRITISH BURMA—*Rangoon.*—Month of December, 1911. Population, 293,316. Total number of deaths from all causes, 811, including measles 1, plague 11, smallpox 8, tuberculosis 56, typhoid fever 5.

FRANCE—*Calais.*—Month of February, 1912. Population, 80,000. Total number of deaths from all causes 118, including measles 1, scarlet fever 2, tuberculosis 22.

GREAT BRITAIN.—Week ended February 24, 1912.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 16.8 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 24.6 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Armagh, viz, 6.9, and the highest at Galway, viz, 43.3, per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 18.5 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Falkirk, viz, 6.1, and the highest at Greenock, viz, 23.4, per 1,000. The total number of deaths from all causes was 775, including diphtheria 22, measles 62, scarlet fever 3, typhoid fever 4.

ITALY—*Genoa.*—Two weeks ended February 29, 1912. Population 272,077. Total number of deaths from all causes, 192, including diphtheria 7, measles 1, scarlet fever 1, tuberculosis 56, typhoid fever 1.

Milan.—Month of February, 1912. Population 602,236. Total number of deaths from all causes 138, including diphtheria 1, measles 6, tuberculosis 120, typhoid fever 8.

SPAIN—*Almeria.*—Month of February, 1912. Population 50,910. Total number of deaths from all causes 123, including tuberculosis 14, typhoid fever 3.

Madrid.—Month of February, 1912. Population 584,117. Total number of deaths from all causes 1,213, including diphtheria 12, measles 9, tuberculosis 123, typhoid fever 22.

Seville.—Month of February, 1912. Population 158,235. Total number of deaths from all causes 386, including diphtheria 5, smallpox 3, tuberculosis 69, typhoid fever 5.

TAHITI.—Four weeks ended February 16, 1912. Population 4,000. Total number of deaths from all causes 5. No deaths from contagious diseases.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

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A NOTE ON A PECULIARITY OF PLAGUE ON THE HAMAKUA COAST OF HAWAII.

By George W. McCoy,[1] Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

The writer has recently had occasion to study the data bearing on the prevalence of plague on Hawaii, the largest of the islands of the Hawaiian group. The results in one respect are of unusual interest.

Cases of plague in human beings and in rodents have occurred on the island since 1900. At present the disease is occurring rather extensively among rats on the north coast of the island, known locally as the Hamakua Coast. When the study of the disease in man in this region was undertaken, it was found that all of the cases but one had the bubo in the neck. It is well known that the experience in plague generally is that only a small percentage of buboes are in the neck. For comparison it seemed desirable to study the facts with reference to the cases that had occurred elsewhere on the island of Hawaii.

The figures are given in parallel columns.

Plague on Hawaii.

	Plague on Hawaii other than the Hamakua Coast, 1900-1912.		Plague on the Hamakua Coast, 1910-1912.	
	Number.	Per cent of all.	Number.	Per cent of all.
Cases under 15 years	16	38+	4	40
Cases over 15 years	26	62−	6	60
Location of buboes:				
Cervical	1	2+	9	90
Axillary	....	....	1	10
Inguinal	36	86−	....	....
Axillary and inguinal	5	12−	....	....

The facts in regard to the location of the buboes are very striking. Plague in the island other than that on the Hamakua Coast shows the usual preponderance of cases with inguinal buboes (86 per cent), while in the case of plague on the Hamakua Coast the bulk of the cases (90 per cent) had buboes in the cervical region, while none had them in the inguinal region and but one had an axillary bubo.

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[1] Detailed as sanitary adviser to the governor of Hawaii.

The number of cases in the Hamakua Coast group is, of course, small, and it is barely possible that it may be merely a coincidence that all but one had cervical buboes, but the writer is inclined to believe that another explanation must be sought.

It is well known that when plague is induced in experimental animals by feeding infected material, in the great majority of cases a bubo develops in the neck; hence one is justified in suspecting that when a series of cases in human beings occur in which cervical buboes predominate we must consider it at least possible that the usual mode of transmission (through fleas) may not have operated in these cases, and that ingestion may have played a part.

It seems clear that regardless of the direct mode of infection, rats are the primary source of the human cases, as large numbers of plague-infected rats are being taken on the Hamakua Coast.

The writer is indebted to Dr. J. S. B. Pratt, president of the Territorial board of health, for the data employed in preparing this note.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BROOKLINE, MASS.

STABLES, MANURE, AND THE KEEPING OF ANIMALS.

ARTICLE VI.

SECTION 1. No person or corporation shall keep or allow to be kept upon any premises in his or its possession, within the limits of this town, swine, fowl, or more than one cow, without securing a permit from the board of health to do so. Such permit shall expire on the 1st day of May, annually, unless sooner revoked.

SEC. 2. No person or corporation shall use any building as a stable for horses or cattle, unless such building is properly ventilated; has at least 1 square foot of unobstructed window glass for each 500 cubic feet of air space; and not less than 1,000 cubic feet of air space for each animal; has a tight floor and roof; good drainage, connecting wherever practicable with the public sewer, and a supply of pure water.

SEC. 3. Manure shall not be allowed to accumulate in the neighborhood of barns, and no manure heaps shall be allowed within 100 feet of any dwelling unless so covered or screened as not to prove offensive. Yards surrounding buildings where cows are kept must be well drained and free from standing water and filth. The barns shall be kept as clean as possible, and the floor shall be sprinkled before being swept.

SEC. 4. No swine shall be kept in cellars of cow stables, except by special permit of the board of health.

SEC. 5. No manure shall be kept in cellars of cow stables, except by special permit of the board of health.

SEC. 6. All premises where animals or fowl are kept shall be open at all times to inspection by the board of health or its appointed officers.

SEC. 7. Any person having reason to suspect the presence of glanders or farcy among horses, or any contagious disease among any domestic animals, shall immediately report that suspicion, together with the street and number of the premises at which the animal is kept, to the board of health. (The more ordinary symptoms of glanders and farcy are: A discharge from the nostrils, enlargement and hardness of the glands under the lower jaw; or nodular enlargement of the skin with or without ulceration.)

SEC. 8. Barns, stables, or any of the contents thereof, which in the opinion of the board of health have been subjected to infection or contagion from glanders, farcy, tuberculosis, or other animal disease, shall be disinfected to the satisfaction of the board of health.

SEC. 9. The manure from stables on or within 50 feet of public ways shall not be removed between the hours of sunrise and sunset, except by permission of the board of health.

SEC. 10. Manure shall not be transported through streets unless properly covered.

[Ordinance, board of health, adopted Nov. 6, 1911.]

CINCINNATI, OHIO.

SPITTOONS—TO BE PROVIDED IN FACTORIES, MERCANTILE ESTABLISHMENTS, AND OFFICES.

SECTION 1. That every factory, business house, mercantile house, and office provide a cuspidor for each 10 employees of such factory, business house, mercantile house, and office, and in no case shall there be less than 1 cuspidor; said cuspidor to be placed according to convenience of employees in respect to the distribution of the employees over the floor space. All such cuspidors must be kept clean by the owner or owners of any such factory, business house, mercantile house, and office.

Sec. 2. Whoever violates any provision of this order and regulation, or obstructs or interferes with the execution hereof, shall be fined not to exceed $100 or imprisoned for not to exceed 90 days, or both, but there shall be no imprisonment for a first offense, and each prosecution shall be as for a first offense unless the affidavit upon which the prosecution is instituted contained the allegation that the offense is a second or repeated offense.

Sec. 3. If such violation, obstruction, or interference be by a corporation, it shall forfeit and pay to the city of Cincinnati a sum not to exceed $300, to be collected in a civil action brought in the name of the municipality.

Sec. 4. Any officer of the city of Cincinnati having authority in the matter of this order and regulation who permits a violation hereof shall be subject to fine or imprisonment as provided in section 2 hereof.

Sec. 5. This order and regulation shall take effect and be in force from and after the earliest period allowed by law.

[Regulation, board of health, adopted Sept. 6, 1911.]

CONNELLSVILLE, PA.

PRIVIES AND CESSPOOLS—TO BE CONNECTED WITH PUBLIC SEWERS.

Section 1. Any person, firm, company, or corporation using, maintaining, or owning any privy, cesspool, or water-closet on property abutting on or adjoining any street or alley in which is located a public sewer shall connect such privy, cesspool, or water-closet with such public sewer in such manner as to carry away all refuse deposited therein.

Sec. 2. If any person, firm, company, or corporation shall violate the provisions of this ordinance and shall persist in and continue to violate the same after due notice of such violation has been given by the burgess, then and in that case such violation shall be remedied by the borough making all such alterations and connections as shall be deemed necessary, the cost thereof to be collected as other debts due to a borough are collectible.

[Ordinance adopted July 18, 1911.]

DETROIT, MICH.

INSANITARY PREMISES.

When the board of health of the city of Detroit shall determine upon report of its inspector or inspectors that any premises located within said city are unsanitary, said board shall, by its health officer or inspector, have the right, power, and authority to enter upon said premises and to notify the owner, agent, or occupant of any such premises that they are unsanitary and a menace to the public health, and to require such owner, agent, or occupant to put such premises in a sanitary condition, as may be required by the rules and regulations of the board of health of the city of Detroit, the ordinances of said city, or the laws of the State of Michigan, and if such notice be not complied with, such premises may be declared unfit for habitation and the occupant compelled to vacate and leave said premises forthwith, and a notice in accordance with the provisions of this order may be posted conspicuously upon said premises, to so remain until removed by authority of said board of health or its health officer.

Persons violating any of the provisions of this order or interfering with any officer while enforcing it will be prosecuted as provided by law.

[Order, board of health, adopted Oct. 10, 1911.]

EAST ORANGE, N. J.

ICE—REGULATION OF THE SALE OF.

Section 1. No person, or persons, firm, or corporation shall sell or deliver ice within the limits of the city of East Orange without a permit first had and obtained from the board of health of the city of East Orange. Such permit shall be granted by the board of health if in its judgment conditions warrant it, on application thereof, signed by the party applying, and in case of a corporation, by some officer thereof, which application shall state the name under which, and the place or places where, the ice business is to be conducted, the character of such business, whether wholesale or retail, the name of the party or parties from whom the ice is secured, and all places where such ice is cut or manufactured, provided, at the time of such application, the applicant shall pay to the board of health a fee of $2 for each permit and shall fully comply with the provisions of this ordinance. Every such permit, unless sooner forfeited or revoked, shall expire on the 31st day of December next succeeding the date when it was granted.

SEC. 2. No impure ice or ice cut within or outside of the city of East Orange from a polluted pond, lake, stream, or other source, and no ice manufactured from impure water shall be used, sold, or manufactured within said city. No such ice shall be brought into the city for the purpose of use or sale.

SEC. 3. Upon request of the board of health, any person, persons, partnership or corporation to whom any such permit shall be granted shall, at any time during the period thereof, furnish any further information in writing which said board may demand, concerning any matters covered in this ordinance. If such information is not furnished to said board within five days after the request therefor, said permit may be revoked and thereafter no person or corporation shall be protected thereby in any manner whatsoever. Nothing herein shall prohibit the party whose permit is forfeited for making an application for a new permit.

SEC. 4. Any permit granted hereunder may be revoked by the board of health whenever in its judgment the use of any ice sold or delivered under said permit is or would be detrimental to the public health. Pending investigation said board may in its discretion order said permit to be suspended, and all transactions thereunder to be discontinued under the penalties herein provided for sales of ice without a permit.

SEC. 5. No wagon, cart, or vehicle of any kind shall be used or run at any time for the sale or delivery of ice in this city unless there shall be displayed on each side thereof a tag or plate furnished by the board of health, showing that said vehicle is owned, controlled or used by a party to whom a permit has been granted, in accordance with the provisions of this ordinance, and for each tag or plate so furnished said board may collect a fee of 25 cents to cover the cost thereof. No such tag or plate shall be used after the forfeiture, revocation, suspension, or expiration of the permit, the existence of which it indicates, and is intended to show. Each office, store, station, depot, house, or other place used for the distribution or sale of ice in this city shall require a permit as provided herein, and when such permit shall have been granted as provided in this ordinance shall likewise exhibit such tag or plate.

SEC. 6. Any person, persons, partnership, or corporation who shall violate, suffer or authorize a violation of any provision of this ordinance, shall, on conviction thereof, forfeit and pay a penalty not exceeding $50 and not less than $10 for each offense.

All ordinances or parts of ordinances inconsistent with the provisions of this ordinance are hereby repealed, and this ordinance shall take effect on the 1st day of January, 1912.

[Supplement to sanitary code adopted Nov. 16, 1911.]

TORRINGTON, CONN.

FOODSTUFFS—PROTECTION AND SALE.

SECTION 1. No meat, fish, birds or fowl, fruit or vegetables, not being then healthy, fresh, sound, wholesome, and safe for human food, nor any meat or fish that died by disease, or accident, and no veal less than 4 weeks old, shall be brought within said borough or offered or held for sale, in any public or private market as such food anywhere in said borough. [Ordinance effective July 1, 1911.]

Regulations.

SECTION 1. The conveying through the streets of Torrington or the exposing in front of stores or other places meat, fowl, or fish, intended for human consumption, unless so covered that the same can not be contaminated by dust, mud, or filth, is hereby prohibited.

SEC. 2. The exposing of fruits, vegetables, or other foodstuffs, intended for human consumption, outside of stores, markets, or places of sale, is hereby prohibited, unless the stand or bottom of the container is at least 2 feet above the sidewalk.

SEC. 3. No meat or dead animals above the size of a rabbit shall be taken to any public or private market to be sold for human food until the same shall have been fully cooled after killing, nor until the entrails, head, and feet (except of poultry and game, and except the heads and feet of swine) shall have been removed.

SEC. 4. No person shall expose, sell, or offer for sale for human consumption any breadstuffs, cake, pastry, candy, confectionery, dried fruits, or shelled nuts, outside of any building, or in any open window or doorway, or any alley, street, sidewalk, or thoroughfare, unless such food is properly protected from insects, dust, dirt, and other foreign or unwholesome material by suitable coverings.

SEC. 5. Every person violating these regulations, on conviction, shall forfeit or pay a penalty of not more than $50.

[Regulations effective July 1, 1911.]

FREEPORT, ILL.

FOODSTUFFS—PROTECTION, CARE, AND SALE.

SECTION 1. It shall be unlawful to keep, offer for sale, or expose for sale any meat, game, fish, fowl, vegetables, fruit, or prepared food products in open receptacles or broken packages less than 2 feet above the floor of any building, storeroom, or place in which the same may be sold or offered for sale. It shall also be unlawful to keep smoked fish, cheese, cooked meats, figs, dates, dried fruits, olives, sauerkraut, mincemeat, lard, butter, butterine, candy, cakes, crackers, bread, or any prepared food for sale or exposed for sale, unless the same is protected in such manner as to exclude, so far as possible, dust, flies or other insects coming in contact therewith. Apples, oranges, lemons, and fruits which are generally or frequently eaten in the raw condition when offered for sale in broken packages shall at all times be so protected by screens or netting as to exclude flies or other insects. All fruits, vegetables, meats, or other foods kept, sold, or offered for sale shall be kept in receptacles free from decayed matter of every kind.

SEC. 2. All meats, bread, or other food products in transportation from place to place in, through, or about the city of Freeport shall be protected in such manner while in transit as to exclude dust, flies or other insects.

SEC. 3. It shall be unlawful to prepare, keep for sale, or sell any kind of meat, fish, fowl, game, vegetables, fruits, or other foods in any room in which a toilet is located or in any room opening directly into a toilet unless there is outside ventilation in such toilet room.

SEC. 4. Any building, place, or vehicle to be occupied or used by any street vendor of tamales, candy, or other human food shall be inspected and approved by the health officer of said city before license shall issue to such vendor to conduct such business.

SEC. 5. It shall be unlawful for any person or persons to keep live chickens, ducks, turkeys, or other fowls in any cellar or basement underneath any grocery store, market, or other place where food or food products are kept for sale.

SEC. 6. Any person violating any of the provisions of this ordinance shall be subject to a fine of not less than $5 nor more than $100 for each and every offense.

[Ordinance adopted Feb. 5, 1912.]

HOLLAND, MICH.

STABLES AND MANURE.

RULE 5. All stables, yards, and inclosures where horses, cattle, or fowl are kept, shall be kept free from filth and dirt. All manure must be kept in bins completely inclosed, bottom, top, and sides, and from the 1st day of May until the 1st day of November of each year shall be kept constantly screened from flies. All manure bins shall be entirely emptied and thoroughly cleaned at least once in every two weeks.

[Regulations, board of health, adopted Oct. 2, 1911.]

NEW ORLEANS.

BAKERIES, KITCHENS, MILK DEPOTS—TO BE CONNECTED WITH CITY SEWERS.

From present date no permit will be issued by the board of health for the operation of any bakery, confectionery, ice-cream factory, ice-cream parlor, milk depot, dairy, or any place where foodstuffs intended for human consumption are stored or offered for sale unless premises be connected with the public sewers, where same is accessible. In above-named places now operating under a permit this resolution will become effective on January 1, 1912.

[Resolution, board of health, adopted Sept. 12, 1911.]

ORANGE, N. J.

MOSQUITOES—PREVENTION OF THE PROPAGATION OF.

The accumulation of water in which mosquito larvæ breed is hereby declared a nuisance, and any person creating or maintaining or aiding in the creation or maintenance of such nuisance shall, upon conviction thereof, forfeit and pay a penalty of $10, and each day during which such nuisance shall exist shall constitute a separate and distinct offense.

[Ordinance, board of health, adopted Oct. 2, 1911, as a supplement to the sanitary and plumbing code adopted Dec. 1, 1900.]

REDLANDS, CAL.

COMMUNICABLE DISEASES—NOTIFICATION, PLACARDING, DISINFECTION—APPOINTMENT OF BOARD OF HEALTH—DUTIES OF HEALTH OFFICER.

SECTION 1. Section 96 of ordinance No. 430, as amended by ordinance No. 489, is hereby amended to read as follows:

The board of health, consisting of five members, shall be appointed by the board of trustees, and shall hold office during the pleasure of said trustees. Said board of health shall consist of three practicing physicians in said city, one member of the board of trustees of said city, and the city engineer.

SEC. 2. It shall be the duty of the health officer of said city to cause to be thoroughly disinfected by such method and in such manner as may be approved by the board of health, any room or place occupied by any person who may have died from any infectious or contagious disease, or who may have vacated any such room or premises, whenever he has knowledge of the death or the removal of any such person. The expense incurred in such work shall be paid by said city.

SEC. 3. The health officer is hereby given the right to and shall place or cause to be placed in a conspicuous place upon any house or premises, a card or flag where any infectious or contagious disease may exist, indicating the existence of such disease upon such premises, and whenever the health officer shall cause a card or flag, indicating the existence of any infectious or contagious disease to be placed upon or attached to any house or dwelling, or upon any premises, it shall be unlawful for any person or persons to obstruct the view of, or destroy, deface, or remove such card from any such building or premises until such time as the health officer may direct.

SEC. 4. It shall be unlawful for any person attending upon or otherwise coming in contact with any infectious or contagious disease in any manner, or to such an extent as to render him or her liable to communicate such disease to another person, to go into any public place or assembly, or mingle with other persons not affected with such infectious or contagious disease wearing any infected clothing, or carrying any material that may convey infection.

SEC. 5. The health officer shall report immediately to the superintendent of schools and the librarian of the public library, and the principal or teacher of any private school, the name and location of every person whom he may know to be affected with any infectious or contagious disease, and no children or other persons who have been suffering from or affected with any infectious or contagious disease, or who may belong or reside with the family, or in the same house in which a person so affected may be located, shall be permitted to attend school, public or private, within the limits of said city, and all school boards, principals or teachers, or other persons in charge in the city schools, are authorized and required to exclude all such children and persons from said schools until such person so excluded shall show a permit from the health officer, stating there is no longer any danger from contagion or infection.

SEC. 6. The health officer shall visit the public institutions of the city and the public schools at least once in each quarter, investigating the sanitary conditions of the same, and make quarterly reports of such examinations to the board of health.

SEC. 7. The board of health shall meet at least once each month and the health officer of said city shall make a monthly report of the affairs of his office to said city.

SEC. 8. It shall be the duty of any physician, practicing his profession in the city of Redlands, to report to said health officer without any unnecessary delay, the existence of any and all infectious or contagious cases in said city that may be under his care or treatment.

SEC. 9. Ordinance No. 489 is hereby repealed.

* * * * * * *

SEC. 11. Any person violating any provisions of this ordinance herein declared to be unlawful shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not exceeding one hundred dollars ($100).

SEC. 12. This ordinance shall take effect and be in force from and after its passage, provided section 10 of this ordinance shall not affect any present incumbent of any of said offices.

[Ordinance No. 533, amending secs. 3 and 96 of ordinance No. 430, adopted Mar. 6, 1912.]

WILMINGTON, N. C.

DOMESTIC ANIMALS—KEEPING OF.

SECTION 1. It shall be unlawful for any person, firm, or corporation to keep any hog, pig, or swine within any building, pen, or lot within the corporate limits of the city of Wilmington.

Sec. 2. Any person, firm, or corporation violating this ordinance shall be fined five dollars for each hog, pig, or swine so kept for each and every day the same shall be so kept within the corporate limits of the city of Wilmington.

[Ordinance adopted July 5, 1911.]

STABLES FOR COWS—CONSTRUCTION AND MAINTENANCE.

Section 1. It shall be unlawful to keep or maintain any cow on any lot or within any pen or stable in the city of Wilmington within a radius of 50 feet of any dwelling house therein.

Sec. 2. It shall be unlawful to keep more than one cow on any lot or premises within the following prescribed limits of the city of Wilmington, to wit: Within that portion bounded on the west by the Cape Fear River, on the south by the south side of Castle Street, on the east by the east side of Tenth Street, and on the north by the right of way of the A. C. L. Railway.

Sec. 3. Every person, firm, or corporation keeping a cow within the limits described in section 2 hereof shall have therefor a stable wherein such cow shall be kept. Such stable shall have a cement floor and gutter and be equipped with a brick pit, cement lined, or a concrete pit tightly covered with fly proof, in which droppings must be placed daily.

Sec. 4. That all stables herein provided for shall be kept clean, and shall be disinfected and attended to in such manner and under such rules and regulations as may be prescribed from time to time by ordinance under direction of the superintendent of health.

Sec. 5. Any person, firm, or corporation violating any provision of this ordinance shall be fined $5 for each and every offense.

Sec. 6. That this ordinance shall be in force and effect from and after July 25, 1911.

[Ordinance effective July 25, 1911.]

CEREBROSPINAL MENINGITIS.

TEXAS.

Surg. Guiteras reports the occurrence at Galveston of 10 cases of cerebrospinal meningitis during the period from March 20 to 28.

The health officer at El Paso reports 4 cases with 3 deaths for the week ended March 16.

The health officer at San Antonio reports 7 cases with 9 deaths for the week ended March 16.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAR. 16, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	4	2	Moline, Ill		1
Bridgeport, Conn	1		Nashville, Tenn	4	1
Cincinnati, Ohio	8	3	New Orleans, La	9	5
Cleveland, Ohio	1	1	New York, N. Y	6	7
El Paso, Tex	4	3	Oakland, Cal		1
Evansville, Ind	1		Oklahoma City, Okla	5	3
Fall River, Mass	1	1	Orange, N. J	1	
Haverhill, Mass	2		Philadelphia, Pa	1	1
Kansas City, Kans	12		San Antonio, Tex	7	9
Kansas City, Mo	29	12	St. Louis, Mo	2	2
Los Angeles, Cal	2		Springfield, Ill		1
Manchester, N. H	1	1			

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,185 acres of land in Alameda County were covered with poison during the week ended March 16, 1912.

During the same period 4,040 acres of land in San Joaquin County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
alifornia:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.

Record of plague infection—Continued.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California—Continued.				
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	5 squirrels.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Mar. 16, 1912		[1] 136	84	
Oakland	do	14	[2] 796	658	
San Francisco	do	8	[3] 1,845	1,443	
Washington:					
City—					
Seattle	do		869	839	

[1] Identified: Mus norvegicus 84, Mus musculus 52.

[2] Identified: Mus norvegicus 668, Mus rattus 4, Mus musculus 124.

[3] Identified: Mus norvegicus 946, Mus rattus 258, Mus musculus 382, Mus alexandrinus 1,259.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the period under report 53 squirrels from Alameda County were examined for plague infection. No plague-infected squirrel was found.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received During Week Ended Apr. 5, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Florida:				
Counties—				
Calhoun	Mar. 3-9	1		
Citrus	Mar. 10-16	2		
Columbia	do	4		
Duval	Mar. 3-16	27		
Escambia	Nov. 10-16	4		
Hernando	do	20		
Hillsboro	Mar. 3-16	8		
Jefferson	Mar. 3-9	1		
Lake	do	5		
Levy	Mar. 10-16	3		
Palm Beach	do	1		
Polk	Mar. 3-9	1		
Putnam	Mar. 3-16	6		
Santa Rosa	do	3		
Total for State		86		
Illinois:				
Counties—				
Bond	Feb. 1-29	2		
Boone	do	1		
Bureau	do	2		
Christian	do	4		
Clinton	do	13		
Cumberland	do	1		
Douglas	do	9		
Effingham	do	4		
Iroquois	do	1		
Kane	do	15		
Kankakee	do	1		
Knox	do	1		
Lasalle	do	9		
McDonough	do	17		
Montgomery	do	1		
St. Clair	do	1		
Sangamon	do	11		
Shelby	do	2		
Stevenson	do	2		
Vermilion	do	1		
Warren	do	6		
Winnebago	do	1		
Brunswick, city	do	2		
Total for State		107		
***Louisiana:**				
New Orleans	Mar. 17-23	10		
Mississippi:				
Counties—				
Attala	Feb. 1-29	50		
Clarke	do	1		
Jackson	do	2		
Hinds	do	10		
Jefferson Davis	do	20		
Lamar	do	15		
Lauderdale	do	66		
Lee	do	6		
Newton	do	12		
Yazoo	do	1		
Total for State		183		
***Missouri:**				
Kansas City	Jan. 1-31	10		
St. Louis	Mar. 17-23	1		
Total for State		11		
***New Hampshire**				Oct. 1-Dec. 1; approximately 30 cases.

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended Apr. 5, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
New York	Jan. 1-31		1	Cases, p. 352.
Counties—				
Allegany	Feb. 1-29	8		
Cattaraugus	do	1		
Cayuga	do	14		
Chemung	do	1		
Cortland	do	4		
Erie	do	3		
Franklin	do	3		
Genesee	do	19		
Monroe	do	26		
New York	do	5		
Steuben	do	1		
Tioga	do	1		
Tompkins	do	1		
Wyoming	do	1		
Total for State		88	1	
South Dakota:				
Counties—				
Brown	Feb. 1-29	13		
Brule	do	2		
Davidson	do	1		
McPherson	do	4		
Yankton	do	1		
Total for State		21		
Tennessee:				
Knoxville	Mar. 17-23	4		
Utah:				
Counties—				
Beaver	Feb. 1-29	2		
Boxelder	do	4		
Cache	do	3		
Carbon	do	2		
Davis	do	8		
Juab	do	11		
Salt Lake	do	118		
Sevier	do	1		
Tooele	do	8		
Uintah	do	74		
Utah	do	11		
Weber	do	37		
Total for State		279		
Washington:				
Counties—				
Asotin	Jan. 1-31	10		
Chehalis	do	2		
Chelan	do	12		
Columbia	do	6		
King	do	3		
Kittitas	do	2		
Klickitat	do	12		
Mason	do	18		
Skagit	do	2		
Spokane	do	64		
Stevens	do	1		
Walla Walla	do	10		
Whitman	do	12		
Total for State		154		
Grand total for the United States		943	1	

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAR. 16, 1912.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	240	22	2	23	....	12	2	....	....	46	31	11	4
Boston, Mass	670,585	276	31	3	180	1	45	....	....	....	86	22	6	....
Chicago, Ill	2,185,283	713	131	18	101	2	199	11	....	....	171	89	9	2
Cleveland, Ohio	560,663	174	27	3	64	....	39	3	....	....	32	18	2	....
New York, N. Y	4,766,883	1,602	315	30	1,619	14	537	22	1	....	453	208	36	5
Philadelphia, Pa	1,549,008	518	49	5	28	....	66	6	....	....	127	57	12	1
St. Louis, Mo	687,029	260	19	....	44	....	15	2	....	....	41	17	3	2
Cities having from 300,000 to 500,000 inhabitants.														
Cincinnati, Ohio	364,463	166	11	1	13	....	55	2	1	....	7	33	1	....
Detroit, Mich	465,766	177	19	3	....	....	31	2	2	....	....	....	....	....
Los Angeles, Cal	319,198	117	4	....	5	....	10	1	2	....	10	22	....	1
Milwaukee, Wis	373,857	118	10	3	62	....	28	....	....	....	19	9	26	4
Minneapolis, Minn	301,408	....	....	....	....	....	....	....	....	....	....	....	....	....
Newark, N. J	347,469	134	23	1	....	....	17	2	1	....	30	17	2	....
New Orleans, La	339,075	159	6	1	4	....	11	....	12	....	39	22	1	....
San Francisco, Cal	416,912	....	....	....	....	....	....	....	....	....	....	....	....	....
Washington, D. C	331,069	129	6	....	31	....	4	....	....	....	27	15	3	....
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	68	5	1	3	....	5	....	....	....	....	14	....	1
Jersey City, N. J	267,779	....	....	....	....	....	....	....	....	....	....	9	....	1
Kansas City, Mo	248,381	29	2	....	4	....	9	....	1	....	6	4	3	2
Providence, R. I	224,326	89	10	5	24	1	9	....	....	....	....	9	4	....
Seattle, Wash	237,194	47	1	....	11	....	2	....	....	....	13	11	4	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	25	2	....	....	....	4	2	....	....	....	....	....	....
Cambridge, Mass	104,839	33	4	....	9	....	7	....	....	....	6	8	1	....
Dayton, Ohio	116,577	36	2	....	2	....	1	....	11	....	2	2	2	1
Fall River, Mass	119,295	37	5	1	3	....	6	....	....	....	5	3	....	....
Grand Rapids, Mich	112,571	46	2	1	2	....	15	....	....	....	3	4	3	....
Lowell, Mass	106,294	43	1	....	16	....	11	....	....	....	1	6	1	....
Nashville, Tenn	110,364	43	3	....	....	....	1	....	6	7	....	....	....	....
Oakland, Cal	150,174	44	3	1	5	....	....	....	....	....	1	3	....	....
Omaha, Nebr	124,096	34	2	....	....	....	2	....	....	....	....	1	....	....
Toledo, Ohio	168,497	74	2	1	34	2	2	1	1	....	....	8	....	....
Worcester, Mass	145,986	46	7	....	4	....	10	....	....	....	6	3	....	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	17	2	....	....	....	3	....	....	....	1	1	....	....
Bayonne, N. J	55,545	25	2	1	2	....	10	....	....	....	1	4	....	....
Brockton, Mass	56,878	21	1	....	93	1	2	....	....	....	5	2	....	....
Camden, N. J	94,538	11	1	....	....	....	6	....	....	....	4	....	....	....
Duluth, Minn	78,466	16	1	....	....	....	6	....	....	....	....	....	....	....
Elizabeth, N. J	73,409	20	2	1	4	....	8	....	....	....	....	1	2	....
Erie, Pa	66,525	25	3	1	....	....	....	....	....	....	4	3	2	....
Evansville, Ind	69,647	15	....	....	....	....	....	....	....	....	1	3	1	....
Fort Wayne, Ind	63,933	18	2	....	10	....	2	....	....	....	....	5	....	....
Harrisburg, Pa	64,186	21	2	....	50	....	1	....	....	....	....	2	....	....
Hartford, Conn	98,915	39	7	....	....	....	5	1	....	....	4	2	....	....
Hoboken, N. J	70,324	10	....	....	2	....	2	....	....	....	6	....	....	....
Johnstown, Pa	55,482	21	1	....	1	....	....	....	....	....	12	4	....	....
Kansas City, Kans	82,331	....	....	....	....	....	1	....	2	....	....	....	3	....
Lawrence, Mass	85,892	28	2	....	1	....	2	....	....	....	6	3	1	....
Lynn, Mass	89,336	25	3	1	....	....	4	1	....	....	2	4	....	....
Manchester, N. H	70,063	30	1	....	9	....	....	....	....	....	....	....	1	....
New Bedford, Mass	96,652	34	1	....	62	....	5	....	....	....	11	3	1	....
Oklahoma City, Okla	64,205	15	....	....	....	....	....	....	....	....	....	....	....	1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Mar. 16, 1912—Continued.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Passaic, N. J	54,773	28	2		9		5				1	2		
Pawtucket, R. I	51,622	4		1										
Portland, Me	58,571	22	3				2					5		
Reading, Pa	96,071	43	1	1	2		3					2		
Saginaw, Mich	50,510		5				1						3	1
San Antonio, Tex	96,614	56	2		11	2	4	2				9		
South Bend, Ind	53,684	9							1		1	1	1	
Springfield, Ill	51,678	21	5	1			1					3		
Springfield, Mass	88,926	39	1	1	28		4				2	2	1	
Trenton, N. J	96,815	45	6		1		4				6	5		
Wilkes-Barre, Pa	67,105	26	4		5						2	1		
Wilmington, Del	87,411	33										3		
Yonkers, N. Y	79,803	18	3		1		5				7	3		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	12	4				4	1			1		1	
Auburn, N. Y	34,668	14					1				1			
Aurora, Ill	29,807	7	1		3						2			
Berkeley, Cal	40,434	11	1		16		1				1	1	1	
Binghamton, N. Y	48,443	18	1		1		3				2	2		
Brookline, Mass	27,792	7	1		3		1							
Chelsea, Mass	32,452	6			2		4				1		1	
Chicopee, Mass	25,401	6			7	1	2						1	
Danville, Ill	27,871	6	2				1							1
Dubuque, Iowa	38,494	8										1		
East Orange, N. J	34,371	7	1		5		4						1	
Elmira, N. Y	37,176	8	1		2						1	1		
El Paso, Tex	39,279	26	3				2	2	2			7		
Everett, Mass	33,484				1		3	1			3			
Fitchburg, Mass	37,826	11	1				1				2			
Haverhill, Mass	44,115		3		10						6		1	
Kalamazoo, Mich	39,437	16	1		1		7		2		1	1	1	
Knoxville, Tenn	36,346	11			6				1			2		
La Crosse, Wis	30,417	7	2				1							
Lancaster, Pa	47,227		2		80		3				3			
Lexington, Ky	35,099	14	2		6						3			2
Lynchburg, Va	29,494	6	2		49	1	1				1			
Malden, Mass	44,404	9			2		2					1		
Montgomery, Ala	38,136	17			11		2				2	1		
Newport, Ky	30,309	19					4				3	3		
Newton, Mass	39,806	11			19		2							
Niagara Falls, N. Y	30,445	13	2		1		1					1	1	
Norristown, Pa	27,875	12			40		1							
Orange, N. J	29,630	9	2		2		1				1	2	1	
Pasadena, Cal	30,291	11	1									4		
Pittsfield, Mass	32,121	10	2				3					2		
Portsmouth, Va	33,190	16	2						1					
Racine, Wis	38,002	12										3		
Roanoke, Va	34,874	10	1		38	1						1		1
Rockford, Ill	45,401												8	2
Salem, Mass	43,697	14	1		1		3					1		
San Diego, Cal	39,578	7			6						4	4		
Superior, Wis	40,384	6							1			1		
Taunton, Mass	34,259	16	2	1								1		
Waltham, Mass	27,834	5			27		2							
West Hoboken, N. J	35,403	6	4		1		2				1			
Wheeling, W. Va	41,641	21			4		1				4	2	2	
Williamsport, Pa	31,860	11			1								1	
Wilmington, N. C	25,748	20	1		28				4		1	1		
York, Pa	44,750		1				1				3			
Zanesville, Ohio	28,026	8	1				1					1	19	1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Mar. 16, 1912—Continued.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,383	5			2									
Beaver Falls, Pa	12,191		1				1						3	
Bennington, Vt		4												
Braddock, Pa	19,957	15	6	2	1									
Cambridge, Ohio	11,327	3										1		
Carbondale, Pa	17,040	15	1	1	4		2							
Clinton, Mass	13,075	4												
Coffeyville, Kans	12,687		2						1					
Columbus, Ga	20,554	4												
Columbus, Ind		4					1		3			2		
Concord, N. H	21,497	8			13									
Cumberland, Md	21,839	7			1						1	2	1	
Dunkirk, N. Y		4												
Galesburg, Ill	20,089	7	1						1					
Gloucester, Mass	24,398	12										1		
Harrison, N. J	14,498	3	1	1							2			
Kearny, N. J	18,659	5	1		8		2				2	1		
La Fayette, Ind	20,081	11			2							1		
Lebanon, Pa	19,240		2											
Logansport, Ind	19,050	5			1							1	2	1
Marinette, Wis		4			2								2	
Marlboro, Mass	14,577	4					1							
Massillon, Ohio		4	2				1							
Medford, Mass	23,156	6			13		1						1	
Melrose, Mass	15,715	3			4									
Moline, Ill	24,199	13										3		
Montclair, N. J	21,150	8			1		1					1	1	
Morristown, N. J	12,507	3			3		3					1		
Nanticoke, Pa	18,507	4			4									
Newburyport, Mass	19,240		1								2			
North Adams, Mass	22,012	5									1	1		
Northampton, Mass	19,431	5									2			
Ottumwa, Iowa	22,012	11										1		
Palmer, Mass		2												
Palo Alto, Cal		1			1									
Plainfield, N. J	22,050	9			49		1				1		1	
Portsmouth, N. H			1				1		1					
Pottstown, Pa		8			1		1					1		
South Bethlehem, Pa	19,973				5		1					3		
Warren, Pa	11,081	4		1										
Wilkinsburg, Pa	18,924	13	1		2		1							
Woburn, Mass	15,308	2			12									

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

CALIFORNIA.—Month of September, 1911. Population, 2,377,549. Total number of deaths from all causes 2,532, including diphtheria 11, measles 4, scarlet fever 3, tuberculosis 373, typhoid fever 45. Cases reported: Diphtheria 60, measles 232, scarlet fever 69, smallpox 19, tuberculosis (pulmonary), 217, typhoid fever 120.

FLORIDA.—Reports from the State board of health show as follows: Week ended March 9, 1912. Diphtheria present in 6 localities with 17 cases, malaria with 17 cases, smallpox in 9 counties with 53 cases in 8 localities with 14 cases, typhoid fever in 4 loc ses.

Week ended March 16, 1912. Diphtheria present in 4 localities with 12 cases, malaria in 4 localities with 11 cases, smallpox in 9 counties with 33 cases, tuberculosis in 6 localities with 10 cases, typhoid fever in 2 localities with 8 cases.

INDIANA.—Month of January, 1912. Population, 2,700,876. Total number of deaths from all causes 3,186, including diphtheria 24, measles 8, scarlet fever 7, tuberculosis 359, typhoid fever 29. Cases reported: Diphtheria 225 in 41 counties, scarlet fever 294 in 49 counties, smallpox 89 in 15 counties, typhoid fever 131 in 34 counties.

MARYLAND.—Month of February, 1912. Population, 1,295,346. Total number of deaths from communicable diseases 153, including diphtheria 7, scarlet fever 3, tuberculosis 97, typhoid fever 9. Cases reported: Diphtheria 73, measles 100, scarlet fever 64, typhoid fever 57.

MICHIGAN.—Month of February, 1912. Population, 2,810,173. Cases of communicable diseases reported: Diphtheria 199, measles 166, scarlet fever 460, smallpox 95, tuberculosis 147, typhoid fever 203.

FOREIGN AND INSULAR.

BELGIUM.

Quarantine Measures Against Certain Ports Suspended.

According to information received from the minister for foreign affairs, the quarantine measures on account of plague which were put in force by decree of February 1, 1911, against merchandise originating at San Francisco, Cal., were suspended by decree of February 22, 1912. The decree went into effect February 28. The same decree also suspends measures against the ports of Kobe and Osaka, Japan.

CHINA.

Hongkong—Plague—Plague-Infected Rat.

Surg. Brown reports: During the week ended February 10, 4 cases of plague with 4 deaths were reported in Hongkong.

During the same period 2,198 rats were examined for plague infection. One plague-infected rat was found.

EGYPT.

Cairo—Typhus Fever.

Vice Consul Knabenshue reports the occurrence of 7 cases of typhus fever at Cairo during the three weeks ended February 15, 1912.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911, a fatal case February 9, 1912, and 2 fatal cases February 25, 1912.

The last plague-infected rats reported found at Honokaa were 49 found during the week ended March 2, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

	Week ended Mar. 2.	Week ended Mar. 9.
Total rats and mongoose taken	540	585
Rats trapped	527	577
Mongoose trapped	10	8
Rats killed by sulphur dioxide	3	
Examined bacteriologically	462	561
Classification of rats trapped:		
Mus alexandrinus	56	65
Mus musculus	119	126
Mus norvegicus	28	58
Mus rattus	324	328
Classification of rats killed by sulphur dioxide:		
Mus rattus	3	
Average number of traps set daily	1,720	1,720

HONDURAS.

Puerto Cortes.

In the Public Health Reports for June 2, 1911, page 831, the number of overground cisterns in use at Puerto Cortes was given as 2,000. The number was erroneously quoted from a report by Acting Asst. Surg. Stowe, dated May 15, 1911, and should have been given as 200.

Consul Dawson reports, March 5, 1912, that the number of cisterns in Puerto Cortes is approximately 133, and that most of the cisterns are unprotected from mosquitoes. *Stegomyia calopus* are reported to be present in considerable numbers.

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended February 10, 57 deaths from cholera and 26 from plague were reported at Calcutta; in all Bengal, 2,888 cases of plague, with 2,453 deaths: in all India, 15,943 cases of plague, with 13,601 deaths.

ITALY.

Naples—Examination of Emigrants.

Surg. Geddings reports:

Vessels inspected at Naples and Palermo during the week ended March 9.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Mar. 5	Laconia	New York			
6	Taormina	....do	1,473	90	1,980
8	König Albert	....do	900	75	1,320
9	Madonna	....do	651	105	980
	Total		3,024	270	4,280

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Mar. 4	Valsalice	Baltimore			
5	Taormina	New York	156	130	80
9	König Albert	....do	239	180	125
	Total		395	310	205

MEXICO.

Merida—Yellow Fever.

During the week ended March 23 two cases of yellow fever were reported at Merida. The total number of cases from August 1, 1911, to date is 75 with 29 deaths.

RUSSIA.

Typhus Fever.

At Moscow Consul Snodgrass reports the occurrence of 12 cases of typhus fever with 4 deaths during the two weeks ended February 17.

At Odessa Consul Grout reports 156 cases for the two weeks ended January 27,[a] and for the four weeks ended March 2, 181 cases with 15 deaths.

At St. Petersburg Vice Consul Vezey reports 5 cases with 1 death for the week ended February 24.

SOUTH AFRICA.

Plague at Durban, Natal.

Information received from the department of the interior, Pretoria, shows the occurrence of 3 cases of plague with 2 deaths at Durban, Natal, from February 11 to 21. The total number of cases reported to date is 8 with 6 deaths.

VENEZUELA.

Plague and Yellow Fever.

A report received from the sanitary commission shows the occurrence of 5 cases of yellow fever at Caracas during the two weeks ended February 15, 1912.

Acting Asst. Surg. Stewart at La Guaira reports: A fatal case of yellow fever occurred at Maiquetia, a suburb of La Guaira, March 8, and a second case March 9. At Macuto, a health resort situated about 3 miles from La Guaira, a death from yellow fever occurred March 19.

Dr. Stewart further reports that a case of plague was reported at Caracas March 12, the first case reported for six months.

ZANZIBAR.

Zanzibar—Examination of Rats.

Consul Weddell reports that during the two weeks ended February 14. 1,398 rats were examined for plague infection. No plague-infected rat was found.

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[a] Public Health Reports, Feb. 23, 1912, p. 286.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING THE WEEK ENDED APR. 5, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Calcutta	Feb. 4-10		57	
Madras	Feb. 18-Mar. 2	35	26	
Negapatam	Feb. 4-10		4	

YELLOW FEVER.

Brazil:				
Manaos	Feb. 26-Mar. 2		5	
Pernambuco	Jan. 16-31		1	
Mexico:				
Merida	Mar. 17-23	2		
Venezuela:				
Caracas	Feb. 1-15	5	5	
Macuto	Mar. 16-19	1	1	
Maiquetia	Mar. 8-9	2	1	

PLAGUE.

Azores:				
Fayal	Jan. 10			Still present.[1]
Terceira	do			Do.
Brazil:				
Pernambuco	Jan. 16-31		2	
Rio de Janeiro	Feb. 4-10	1		
Chile:				
Iquique	Feb. 24-Mar. 27	2	4	
China:				
Hongkong	Feb. 11-17	6	6	
Egypt:				
Provinces –				
Assiout	Feb. 21-Mar. 7	16	8	
Assouan	Feb. 21-Mar. 6	3	3	
Beni Souef	Feb. 21-28	6	3	
Garbieh	Jan. 25-Mar. 4	7	2	
Girgeh	Feb. 28	1	1	
Kena	Feb. 22-Mar. 7	15	8	
Menouf	Feb. 2-Mar. 7	3	1	
Minieh	Feb. 2-25	8		
India:				
Bombay	Feb. 11-Mar. 2	102	84	
Calcutta	Feb. 4-10		26	
Karachi	Feb. 18-Mar. 2	141	119	
Java:				
Pasoeroean Residency	Feb. 11-17	5	3	
Mauritius	Jan. 12-18	3	1	
Peru	**Mar. 6**			**34 cases in the lazaretto at Trujillo.**
South Africa:				
Durban	**Feb. 12-21**	**3**	**2**	
Straits Settlements:				
Singapore	Feb. 4-10	6	3	
Venezuela:				
Caracas	**Mar. 12**	**1**		
West Indies:				
Trinidad	**Apr. 3**	**1**		

SMALLPOX.

Austria-Hungary:				
Tyrol	**Feb. 11-17**	**2**		
Brazil:				
Pernambuco	**Jan. 16-31**		**64**	
Rio de Janeiro	**Jan. 26-Feb. 24**	**14**		

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[1] Bulletin Sanitary Information, Brussels, Feb. 17, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended Apr. 5, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
Ottawa	Mar. 19-23	7		
Quebec	Mar. 17-23	4		
Sarnia	do	1		
China:				
Hongkong	Feb. 11-17	53	38	
France:				
Marseille	Feb. 1-29		1	
Paris	Feb. 27-Mar. 9	21	1	
Germany	Mar. 10-16	9		
Great Britain:				
West Hartlepool	Mar. 3-9	1		
India:				
Bombay	Feb. 16-Mar. 2	171	82	
Calcutta	Feb. 4-10		1	
Madras	Feb. 18-Mar. 2	26	9	
Italy:				
Leghorn	Mar. 3-16	3		
Naples	Mar. 3-9	6		
Palermo	Mar. 3-16	124	40	
Mexico:				
Mazatlan	Mar. 13-19		1	
Mexico	Jan. 21-Feb. 17	74	34	
Porfirio Diaz	Mar. 17-23	2	2	
Portugal:				
Lisbon	Mar. 3-9	2		
Teneriffe:				
Santa Cruz	Feb. 26-Mar. 2		2	
Russia:				
Odessa	do	6		
South Africa:				
Durban	Jan. 28-Feb. 10	2		
Spain:				
Valencia	Mar. 3-9	31	1	
Straits Settlements:				
Singapore	Feb. 4-10	3	1	
Turkey in Asia:				
Beirut	Feb. 26-Mar. 9	235	10	
Turkey in Europe:				
Constantinople	Mar. 3-10		8	

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAR. 29, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		200	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total Sept. 24-Dec. 26: Cases, 2,070; deaths, 1,508.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 29, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Jan. 14-Feb. 3	62	53	
Calcutta	Nov. 5-Feb. 3		468	
Madras	Nov. 26-Feb. 17	491	402	Madras Presidency, Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,5[illegible]. Jan. 1-31: Cases, 12,411; deaths, 8,509.
Negapatam	Jan. 14-Feb. 3		69	
Rangoon	Oct. 1-Dec. 31	62	52	
Indo-China:				
Saigon	Nov. 20-Feb. 12	1,487	1,035	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192 deaths, 42, including report, p 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2086, vol. I.
Belgrade, district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Jan. 27		755	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 482 deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops Jan. 6-Feb. 5: Cases, 64; deaths, 77.
Acre	Jan. 21	7	6	In vicinity.
Adana	Dec. 2-6	16	5	
Aleppo	Jan. 26-Mar. 2	31	19	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	30	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,6[illegible]; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 29, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Europe:				
Constantinople	Oct. 24–Feb. 3	8	2	
Durazzo	Dec. 7–13	2		
Janina	Jan. 14–22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov 6–19	4	3	In Serres.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Mar. 23			Present.
Ceara	Jan. 1–31		1	
Manaos	Nov. 19–Feb. 24		27	
Para	Dec. 9–16	1	1	
Pernambuco	Jan. 1–15		2	
Ecuador:				
Bucay	Nov. 16–Feb. 29	7	2	
Duran	Dec. 1–Feb. 29	13	6	
Guayaquil	Nov. 16–Feb. 29	118	54	
Huigra	Feb. 1–29			1 case.
Milagro	do	16	7	
Naranjito	do	2	2	
Yaguachi	do			1 case.
Mexico:				
Espita	Dec. 31–Jan. 6	1		
Kambul, hacienda	Feb. 21–27		7	
Maxcanu	Dec. 31–Jan. 6	1		
Merida	Nov. 12–Feb. 10	18	9	Total Aug. 1–Mar. 23: Cases, 65; deaths, 29.
Puerto Mexico (Coatzocoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4–7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31–Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19–25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16–Jan. 15	25	8	
La Guaira	Feb. 24–27	1		In the suburb Maiquetia.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17–23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Brazil:				
Bahia	Sept. 1–30		2	
Para	Dec. 24–Feb. 17	18	12	
Pernambuco	Oct. 1–Jan. 16		5	
Rio de Janeiro	Nov. 12–Dec. 23	6	3	
British East Africa:				
Kismayu	Oct. 15–25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12–Jan. 6	10	4	
Pisagua	Nov. 1–30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9–Feb. 10	20	17	
Dutch East Indies:				
Java				Total Mar. 1–Dec. 30: Cases, 1,817; deaths, 1,324.
Pasoeroean Residency, Malang District.	Nov. 12–Feb. 10	88	48	
Soerobaya	Oct. 17–27	2		
German East Africa:				
Dar-es-Salaam	Nov. 13–15	1	1	From the interior via Bergamogo.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 29, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Ecquador:				
Duran	Feb. 1-29			1 case.
Guayaquil	Nov. 16-Feb. 29	124	52	
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1-Feb. 20	21	15	Sept. 11-16: Cases, 50; deaths, 23.
Assouan	Jan. 1-Feb. 21	23	12	
Behera	Jan. 1-25	3	2	Sept. 11-16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16-21	5	2	
Fayoum	Jan. 1-26	1		
Galioubeh	Jan. 1-Feb. 18	2	2	Oct. 5-Dec. 26: Cases, 1.
Garbieh	Jan. 1-25	8	4	
Kena	Jan. 1-Feb. 22	11	9	Nov. 20-Dec. 13: Cases 3; deaths, 3.
Minieh	Jan. 1-Feb. 1	3	2	Dec. 13: Cases, 1.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-Feb. 3	113	97	
Calcutta	Nov. 11-Feb. 3		110	
Karachi	Nov. 26-Feb. 17	101	89	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Dec. 31	50	50	
Bombay Presidency and Sind.	Oct. 29-Jan. 27	46,419	33,705	
Madras Presidency	do	7,157	5,622	
Bengal	do	10,325	7,878	
United Provinces	do	27,664	24,216	
Punjab	do	2,336	1,741	
Burma	do	566	494	
Eastern Bengal and Assam.	Jan. 1-6	1	1	
Central Provinces	Oct. 29-Jan. 27	11,481	9,027	
Coorg	do	86	50	
Mysore State	do	6,963	5,309	
Hyderabad State	do	19,267	17,731	
Central India	do	5,754	4,764	
Rajputana and Ajmere Merwara.	do	628	504	
North West Province	do	2	2	Total for India, Oct. 29-Jan. 27: Cases 13,649; deaths, 111,044. Total, year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Feb. 12	27	2	
Mauritius	Nov. 3-Jan. 11	51	30	
Persia:				
Buchir	Feb. 4-24	19	5	
Peru:				
Departments—				
Callao	Oct. 1-21	1		In November 1 case; in January 3 cases with 2 deaths.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Mar. 6, 34 cases in the lazaretto at Trujillo.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol 1
Siam:				
Bangkok	Nov. 4-Jan. 27		3	
South Africa:				
Durban	Jan. 14-Feb. 11	5	4	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	21	20	
Turkey in Asia:				
Jiddah	Jan. 13-Feb. 2	6	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 29, 1912.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Feb. 26	16	7	And vicinity.
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	Oct. 1-Nov. 30		31	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	2		
Budapest	Jan. 4-10	25		
Galicia	Dec. 24-Feb. 24	2		
Krain	Jan. 14-20	7		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-20	1		
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 1-Jan. 15		505	
Rio de Janeiro	Nov. 26-Jan. 20	4	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 16	5		
Nelson	Dec. 24-30	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-20	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Mar. 16	84		
Sarnia	Oct. 17-Dec. 31	42		
Toronto	Jan. 6-Feb. 10	2	1	
Windsor	Feb. 4-Mar. 16	8		
Quebec—				
Montreal	Dec. 17-Mar. 16	22		
Quebec	Dec. 10-Mar. 9	253	2	
Ceylon:				
Colombo	Nov. 12-Feb. 10	3		And vicinity.
Chile:				
Iquique	Dec. 10-Jan. 20	3	1	
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-9	43		Feb. 17—Decreasing.
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chenghai	Jan. 29-Feb. 10			Present.
Chungking	Nov. 18-Feb. 3			Do.
Hankow	Jan. 21-Feb. 3	1	1	
Hongkong	Nov. 12-Feb. 10	297	218	
Kityang	Jan. 21-Feb. 3			Do.
Nanking	Dec. 10-Feb. 24			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-Feb. 11	4		
Port Said	Jan. 30-Feb. 4	1		
France:				
Marseille	Jan. 1-31		3	Nov. 1-30, 1 death.
Paris	Dec. 3-Feb. 24	85	5	
Germany				Total, Dec. 31-Mar. 9: Cases, 37.
Hamburg	Jan. 21-27	1		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
London	Jan. 14-Feb. 24	6	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-24	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 29, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 19–Feb. 10	222	95	
Calcutta	Nov. 19–Feb. 6		19	
Madras	Nov. 26–Feb. 17	87	41	
Rangoon	Oct. 1–Dec. 31	61	17	
Indo-China:				
Saigon	Nov. 13–Feb. 12	28	1	
Italy:				
Genoa	Dec. 1–Jan 31	33	2	
Leghorn	Dec. 16–Feb. 24	92	1	
Messina	Nov. 19–Jan. 31		6	
Naples	Dec. 3–Mar. 2	82	1	
Palermo	Nov. 26–Mar. 2	2,445	833	
Turin	Jan. 15–Feb. 25	6		
Japan:				
Arima-Mura	Nov. 12–18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17–23	1		
Kobe	Jan. 22–28	2	1	Jan. 20, 1 case from s. s. Suveric from Hongkong. Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12–18	1		
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Java:				
Batavia	Nov. 12–Feb. 10	35	11	
Malta	Dec. 24–Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18–Mar. 3		7	
Chihuahua	Nov. 20–Feb. 11	92	36	
Coahuila, State	Oct. 1–30		16	
Guadalajara	Jan. 14–Mar. 9	5	2	
Juarez	Dec. 19–Mar. 9	14	5	
Magdalena	Dec. 23–Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18–24	1		
Mazatlan	Dec. 11–Feb. 27		10	Mar. 16, 25 cases in the lazaretto.
Mexico	Nov. 26–Jan. 20	61	33	
Monterey	Dec. 11–24		2	
Porfirio Diaz	Dec. 3–Mar. 9		33	
Salina Cruz	Feb. 11–Mar. 9	4	2	
San Antonio	Jan. 1–21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21–27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12–Dec. 30	3	1	
Tampico	Dec. 1–Mar. 1		14	
Tapachula	Nov. 1–Dec. 31		14	
Portugal:				
Lisbon	Dec. 9–Mar. 2	45		
Russia:				
Batum	Dec. 1–31	1		
Libau	Dec. 17–23	1		
Moscow	Nov. 19–Feb. 10	30	10	
Odessa	Nov. 26–Feb. 24	21	1	
Reval	Nov. 1–30	1		
Riga	Dec. 24–Jan. 27	16		Oct. 1–Nov. 30; deaths, [illegible]
St. Petersburg	Nov. 19–Feb. 3	122	22	
Warsaw	Nov. 5–Dec. 2		185	
Siam:				
Bangkok	Nov. 5–Jan. 27		1,326	
Siberia:				
Omsk	Jan. 1–31	7		
South Africa:				
Durban	Jan. 21–27	1		
Johannesburg	Jan. 7–Feb. 10	36		
Spain:				
Barcelona	Feb. 6–12		1	
Cadiz	Nov. 1–Jan. 31		22	
Madrid	Dec. 1–Jan. 31		3	
Malaga	Nov. 1–30		45	
Seville	Dec. 1–Feb. 29		8	
Valencia	Dec. 3–Mar. 2	221	11	
Straits Settlements:				
Singapore	Nov. 19–Feb. 3	22	8	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Mar. 29, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Feb. 17		42	
Turkey in Asia:				
Beirut	Dec. 3-Feb. 24	1,005	87	
Turkey in Europe:				
Constantinople	Dec. 4-Mar. 3		87	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Mar. 9	163,084	48								1			1
Antwerp	..do	316,604	79	3						1				
Asuncion	Feb. 10	75,000	39	2						1				
Athens	Mar. 1-11	250,010	153	36							1	4	5	
Barcelona	Mar. 2-13	591,272	360	70						6	1	3		2
Beirut	Mar. 2	80,000	20					10						
Do	Mar. 9		20							5				
Belfast	..do	385,492	152	33						2	1			11
Belgrade	..do	90,050	34								1			
Berlin	Mar. 2	2,091,855	694	83						2	6	17	4	8
Birmingham	Mar. 9	842,512	218								1	2		11
Do	Mar. 16		221							1	1	4		14
Bombay	Feb. 17	979,445	717	40	19			28						7
Do	Feb. 24		787	49	38			30		30			12	
Do	Mar. 2		655	54	27			24					9	
Bordeaux	Mar. 16	253,000	99	10								1	2	
Bradford	Mar. 9	289,618	99	11							1	1	2	1
Bristol	..do	359,400	89										7	1
Brussels	..do	639,384	165	21						2		2	3	1
Cairo	Feb. 18	689,439	362	29					2	1		6	1	
Do	Feb. 25		396	20					2	2		6	1	
Calcutta	Feb. 10	890,493	444	20	26	57		1					2	
Catania	Mar. 15	207,000	85	5								2	3	
Christiana	Mar. 9	246,000	74	9								2	4	
Cienfuegos	Mar. 2	33,578	11							1				
Colombo	Feb. 17	227,026	120	13						5				
Constantinople	Mar. 10	1,000,000	302	34				8		7	5		12	
Copenhagen	Mar. 2	465,000	142	17						1	1		4	
Dublin	Mar. 9	406,536	218	24						2		3	4	2
Durban	Feb. 3	69,165	22	1										
Do	Feb. 10		11							1				
Do	Feb. 17		12	1						2				
Edinburgh	Mar. 9	321,200	113	11									6	2
Georgetown	..do	57,577	51	4						3				
Ghent	..do	166,235	53	7								1		
Glasgow	Mar. 15	785,600	316							3	5	5	21	3

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Gottenborg	Mar. 2	170,100	43	12										1
Do	Mar. 9		47	10									1	
Guadalajara	Mar. 16	119,468	73	1						1				
Hamburg	Mar. 9	953,079	287	23							6	11	4	2
Harput	Feb. 24	21,000		2									1	1
Havre	Mar. 9	136,159	70	11									4	
Hongkong	Feb. 17	336,488			6			38				1		
Hull	Mar. 9	282,987	77							1		1		
Do	Mar. 16		89							1		1	1	
Iquique	Feb. 3	40,000		6	1					1				
Do	Feb. 10			6	1									
Do	Feb. 17			6	1							1		
Do	Feb. 24			8	1									
Karachi	do	148,000	148		48								28	
Do	Mar. 2		158		71								18	
Kingston	Mar. 16	21,000	12								1			
Do	Mar. 23	21,000	10	2						1				
Kobe	Mar. 3	418,646	127									1		
Leghorn	Mar. 16	104,000	29											
Leipzig	Mar. 2	605,755	186	25						1		4		
Libau	do	84,000									3	1		
Do	do										3	1		
Do	Mar. 10									1	1	2		
Liege	Mar. 2	167,676	55	2							1		1	
Do	Mar. 9		49	7									2	
London	do	7,340,125	1,698							4	6	15	19	22
Lubeck	do	100,000	35	6						4		1		
Madras	Feb. 24	518,660	371			19		6		1			2	
Do	Mar. 2		406			7		3						
Manaos	do	52,000	54	5			5							
Manchester	Mar. 9	631,533	265							2	4	4	17	14
Mazatan	Mar. 19	22,000	14	1				1						
Mexico	Jan. 27	719,052	378	20				7	3		2	3		1
Do	Feb. 3		424	24				3	9		2	4	3	5
Do	Feb. 10		437	19				14	18			2		3
Do	Feb. 17		407	25				10	5			1	3	4
Montreal	Mar. 23	466,197	177	28						4	4	4		4
Munich	Mar. 2	610,000	195	31									3	
Nagoya	Feb. 17	422,848	126							1		1		
Nantes	Mar. 10	170,535	62	15						1	1	1		
Do	Mar. 17		66	25								2	1	
Newcastle	Mar. 9	269,193	98	13							2	1	1	1
Nottingham	Mar. 9	260,000	82	11							1		2	
Odessa	Mar. 2	575,000	179	26					4	1	3	2		
Palermo	Mar. 9	340,000	176	6				23		1	3	1		
Do	Mar. 16		176	12				17			1	1		1
Paris	Mar. 2	2,888,110	973	223				1		9	6	6	40	7
Do	Mar. 9		982	249						3	3	7	30	12
Port Elizabeth	Feb. 10	30,692	10	2						1				1
Port Said	Feb. 11	52,811	25	4										
Do	Feb. 18		30	3						1				
Rangoon	Feb. 17	293,316	234		19			6						
Do	Feb. 24		221		29			8						
Valencia	Mar. 2	240,000	99	4									1	
Do	Mar. 9		107	7				1		1	1	2	1	
Victoria	do	31,620	9	1								2		
Vienna	Mar. 2	2,064,583	746	119							4	6	6	2
Vigo	Feb. 24	41,500	17	3								1		
Winnipeg	Mar. 9	151,958	46	4						1			1	
Do	Mar. 16		48	2									3	
Yokohama	Feb. 26	444,039										1		

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

ALGERIA—*Oran.*—Month of February, 1912. Population, 123,086. Total number of deaths from all causes 191, including diphtheria 2, measles 7, tuberculosis 29, typhoid fever 3.

BRAZIL—*Pernambuco.*—Two weeks ended January 31, 1912. Population, 225,000. Total number of deaths from all causes 392, including plague 2, smallpox 64, tuberculosis 60, yellow fever 1.

BRITISH EAST AFRICA—*Mombasa.*—Month of January, 1912. Population, 26,000. Total number of deaths from all causes 55, including tuberculosis 6.

FRANCE—*Marseille.*—Month of February, 1912. Population, 550,619. Total number of deaths from all causes 806, including diphtheria 6, measles 1, smallpox 1, tuberculosis 126, typhoid fever 8.

Roubaix.—Month of February, 1912. Population, 122,723. Total number of deaths from all causes 168, including scarlet fever 2, tuberculosis 17, typhoid fever 1.

GREAT BRITAIN.—Week ended March 2, 1912:

England.—The deaths registered in 77 great towns correspond to an annual rate of 15.4 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 22.1 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Sligo, viz, 4.4, and the highest at Newtownards, viz, 40.1.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 18.7 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Kirkaldy, viz, 10.3, and the highest in Greenock, viz, 24. The total number of deaths from all causes was 784, including diphtheria 9, measles 56, scarlet fever 6, typhoid fever 1.

JAMAICA—*Kingston.*—Month of February, 1912. Population, 52,000. Total number of deaths from all causes 157, including tuberculosis, pulmonary, 26, typhoid fever 4.

NEW ZEALAND.—Month of November, 1911.

Auckland.—Population, 102,676. Total number of deaths 73, including tuberculosis 3.

Christchurch.—Population, 80,193. Total number of deaths 45, including diphtheria 1, tuberculosis 3.

Dunedin.—Population, 64,237. Total number of deaths 54, including tuberculosis 5.

Wellington.—Population, 70,729. Total number of deaths 57, including diphtheria 1, tuberculosis 5.

St. Thomas.—Three months ended December 31, 1911. Population, 11,912. Total number of deaths from all causes 202, including diphtheria 2, tuberculosis, pulmonary, 4, typhoid fever 1.

Siam—*Bangkok*.—Four weeks ended January 27, 1912. Population, 600,000. Total number of deaths from all causes not reported. The deaths include cholera 196, plague 1, smallpox 700.

Sierra Leone—*Freetown*.—Month of January, 1912. Population, 40,000. Total number of deaths from all causes 79. No contagious diseases.

South Africa—*Johannesburg*.—Two weeks ended February 10, 1912. Population, 237,220. Total number of deaths from all causes 140, including diphtheria 1, measles 1, scarlet fever 1, tuberculosis 31, typhoid fever 14.

Venezuela—*La Guaira*.—Two weeks ended February 29, 1912. Population, 10,000. Total number of deaths from all causes 21 including tuberculosis 1, yellow fever 1.

By authority of the Secretary of the Treasury:

Rupert Blue,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

VOL. XXVII. APRIL 12, 1912. No. 15.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BROOKLINE, MASS.

BARBERS AND BARBER SHOPS.

ARTICLE IX. SEC. 1. All barber shops, together with all furniture, shall be kept in a cleanly and sanitary condition. Mugs, shaving brushes, razors, scissors, clipping machines, pincers, needles, and other steel instruments shall be sterilized either by immersion in steam, boiling water, or in alcohol of at least 60 per cent strength, after each separate use. Combs shall be thoroughly cleaned with soapsuds and brush after each separate use. A separate clean towel shall be used for each person. Alum or other material used to stop the flow of blood shall be applied only on a towel or other clean cloth. The use of powder puffs and of sponges is prohibited, except that a sponge owned by a customer may be used on him. Every barber shop shall be kept well ventilated and provided with running hot and cold water. No person shall be allowed to use any barber shop as a sleeping room. Every barber shall thoroughly cleanse his hands immediately before serving each customer. Every barber shop shall be inspected at least twice annually by the sanitary agent of the board. A copy of this order shall be kept posted in plain view in every barber shop.

[Ordinance, board of health, adopted Nov. 6, 1911.]

CLEVELAND, OHIO.

ICE CREAM—PREPARATION AND SALE.

Resolution No. 131.

Be it resolved by the Board of Health of the city of Cleveland, Ohio, that part 5, title 3, of the rules and regulations of said board be supplemented as follows:

SEC. XX. No person, firm, or corporation, or any servant, agent, or employee thereof shall sell, offer for sale, expose for sale, or have in possession with intent to sell, ice cream adulterated within the meaning of this resolution.

SEC. XXI. Ice cream shall be deemed to be adulterated within the meaning of this resolution:

First: If it shall contain boric acid, sodium benzoate, formaldehyde, saccharin, or any other added substance or compound of copper, iron, oxide, ochres, or any coloring substance except the harmless vegetable colors and cochineal, carmin, and the following mineral colors: Red shades, poncean 3 R; arythrosin—orange 1; yellow shade, naphthol—yellow S.; green shade, light green S. F.; blue shade, indigo—diasulpho acid.

Second. If it shall contain any deleterious flavoring matter or flavoring matter not true to name.

Third. If it is an imitation of or offered for sale under the name of another article.

Fourth. If it be made of condensed milk or cream from sources not inspected by the Cleveland Board of Health.

Sec. XXII. Nothing in this resolution shall be construed to prohibit the use of fresh eggs and not exceeding one-half of 1 per cent of pure gelatin, gum tragacanth, or other vegetable gums of quality approved by the Board of Health of the city of Cleveland.

Sec. XXIII. No ice cream shall be sold within the city of Cleveland which contains over 0.25 per cent of acidity.

* * * * * * *

Sec. XXV. When fruit or nuts are used, the fruit shall be sound, clean, and mature; nuts, when used, shall be sound and nonrancid.

Sec. XXVI. It shall be unlawful for any person, firm, or corporation to sell, offer for sale, or have in their possession with intent to sell any ice cream in any container which is falsely labelled or branded as to the name of the manufacturer of the contents thereof. All utensils used in the handling or sale of ice cream shall be of nonabsorbent material, free from rust or corrosion, and constructed in such a manner as shall be easily cleaned and sterilized.

Sec. XXVII. Any building, room, or premises in which ice cream is manufactured, handled, or stored, shall conform to section 7, title 3, part 5, of the health regulations of the city of Cleveland, except that no vat will be required and in addition to which provisions the building, room, or premises shall not directly connect with any other room, shed, or building whatsoever, by means of any door, window, passage, or opening; the walls shall be plastered or ceiled and maintained in a sound condition. No building or room in which ice cream is manufactured, handled, or stored shall be within 25 feet of any water closet, privy, chicken coop, stable, or building in which domestic animals are kept.

Sec. XXVIII. It shall be unlawful to refreeze ice cream.

Sec. XXIX. Any person, firm, or corporate body who shall violate any of the provisions of this act shall be guilty of a misdemeanor and upon conviction thereof shall be sentenced to pay a fine of not less than $50 nor more than $100.

[Ordinance, board of health, adopted July 8, 1911.]

COLUMBUS, OHIO.

ICE CREAM—PREPARATION OF.

Sec. 2. *Constituents of ice cream.*—That ice cream shall be made only from wholesome milk, or milk products derived from dairies or places of business inspected by, or holding a certificate of qualification (as provided in section 3, as amended, of title I, part 3 of the sanitary code) acceptable to, the board of health, sugar with or without natural flavoring, and with or without not to exceed in the aggregate seven-tenths of 1 per cent of starch, gelatine, gum arabic or tragacanth, and shall contain not less than the per cent of milk fat as hereinafter designated.

[Sec. 2, part III, title 3 of the sanitary code as amended Nov. 14, 1911.]

DETROIT, MICH.

ROLLER TOWELS AND TOWELS FOR COMMON USE PROHIBITED IN PUBLIC LAVATORIES.

Sec. 1. No person, firm, or corporation owning, in charge of, or in control of any public lavatory, toilet room, or wash room shall maintain in or about such lavatory, toilet room, or wash room any roller towel or towel for common use. The term "common use" as used in this ordinance shall be construed to mean for use by more than one person.

Sec. 2. Any person, firm, or corporation violating any of the provisions of this ordinance shall be fined not less than $5 nor more than $100 for each offense, in the discretion of the court.

[Ordinance adopted Jan. 23, 1912.]

EAST ORANGE, N. J.

DOMESTIC ANIMALS—KEEPING OF.

Sec. 1. No person, firm, or corporation shall keep or maintain live poultry or fowl of any kind, rabbits, hares, or guinea pigs, ducks, and geese, within the city of East Orange, without a permit therefor from the board of health, which permit shall be granted upon written application therefor and compliance with the provisions of this ordinance and the payment of a fee of $1. Such permit may be revoked by said board for violation of this ordinance.

Sec. 2. No rabbits, hares, guinea pigs, ducks and geese, live poultry or fowl of any kind shall be kept or maintained in any dwelling house or part thereof, or in any tenement house or yard thereof, nor shall any of the above-mentioned animals or fowls be allowed to run at large, but shall be housed in a suitable house or coop, with an inclosed runway. Such house or coop and runway shall be kept thoroughly clean and unobjectionable at all times, and shall be cleaned at least once in every week, and more often if the health officer shall so require. No part of such house or runway shall be nearer than 30 feet from the doors or windows of any building occupied by human beings, whether for dwelling or business purposes.

Sec. 3. Any person, firm, or corporation who shall be convicted of a violation of this ordinance shall forfeit and pay a penalty of not less than $5 nor more than $10 for each and every offense.

All ordinances or parts of ordinances inconsistent herewith are hereby repealed. This ordinance shall take effect on the 1st day of January, 1912.

[Supplement to Sanitary Code adopted Nov. 16, 1911.]

FREEPORT, ILL.

SECOND-HAND CLOTHING, HOUSEHOLD GOODS, AND FURNITURE—PERMITS TO CONDUCT RUMMAGE SALES OF.

Sec. 1. Any charitable or religious organization, or any person of the city of Freeport desiring to conduct a sale of second-hand furniture, household goods, second-hand clothing, and other such articles which such sales are usually known and designated as "rummage sales" shall make application to the health officer of said city for the holding of such sales.

Sec. 2. The health officer shall examine or cause to be examined the articles to be offered for sale, and if the same are not deleterious to the health of the city, he may issue a permit authorizing such organization or person to conduct a sale of the articles inspected by him, which sale in no instance shall be conducted for a longer period than three days.

Sec. 3. Any person or persons conducting a rummage sale within the meaning of this ordinance or anywise connected therewith, without first obtaining a permit therefor, shall be liable to a fine of not less than $5 nor more than $100 for each offense.

[Ordinance adopted Feb. 5, 1912.]

OLD RAGS AND PAPER—STORAGE, CLEANING, AND SORTING.

Sec. 1. No person, firm, or corporation shall keep within the built-up portion of the city any building or place for the storage, drying, cleaning, or assorting of old rags or paper, unless the said premises be at least 100 feet from any house, factory, or other building occupied by human beings.

Sec. 2. Any person who shall violate any of the provisions of this ordinance shall, upon conviction thereof, be subject to a fine of not less than $5 nor more than $50 for each offense and each 24 hours that such violation continues shall constitute a separate offense hereunder.

[Ordinance adopted Feb. 5, 1912.]

HOLLAND, MICH.

COMMUNICABLE DISEASES—NOTIFICATION, PLACARDING, QUARANTINE, BURIAL, DISINFECTION.

IV.—*To prevent spread of contagious diseases.*

Rule 16. It shall be the duty of every owner, agent, and occupant of any dwelling house or other building in which there shall occur a case of diphtheria, scarlet fever, or smallpox, measles, whooping cough, pneumonia, typhoid fever, or consumption, or any communicable disease dangerous to the public health, to immediately give notice thereof to the health officers of this city.

Rule 17. Any physician who may be called to attend a case of any of the aforementioned diseases shall at once report such case to the health officer.

Rule 18. No person sick with any of the diseases specified in Rule 16, nor any clothing or other property that may have been exposed to infection, shall be removed, nor shall any occupant take up residence elsewhere, without the consent and under the direction of the health officer.

Rule 19. Upon receipt of such notice as provided for in Rule No. 16, the board of health, or its officer, whenever in their opinion a disease dangerous to public health exists, will take the necessary measures, by placard, quarantine, and otherwise, to prevent the spread of such disease.

Rule 20. No person shall remove or deface any card or sign from any building or premises which may have been placed there by order of the board of health or the health officer. No occupant of said placarded building or premises shall leave the same, and no person, except the attending physician, nurse, and clergyman, shall enter the same without first obtaining the permission of the board of health or the health officer; provided, that such physician, or clergyman, when called in to a case of scarlet fever, diphtheria, measles, or smallpox, shall wear a contagious-disease gown, the same to be properly disinfected in formaldehyde or bichloride solution after each visit.

Rule 21. In case of death from scarlet fever, diphtheria, measles, or smallpox, body shall be privately conveyed to the cemetery and buried therein without any public funeral services. In such cases burial shall be within 24 hours after death, except when otherwise permitted by health officer.

Rule 22. No person sick with scarlet fever, diphtheria, measles, smallpox, tuberculosis, or any dangerous communicable disease, no corpse of a person having died from any of the above-named diseases, and no article which has been infected or is liable to convey any such disease shall be brought within the limits of the city without the special permit and direction of the board of health.

Rule 23. In case of recovery or death from any of the aforementioned contagious diseases, the person's clothing, rooms, and all such articles as shall have been exposed to infection shall be disinfected, and all such articles as can not be thoroughly disinfected shall be destroyed by burning.

Rule 24. No house or tenement vacated by a person or persons affected by any of the above-mentioned diseases shall thereafter be reoccupied until it shall have been disinfected by the board of health.

Rule 25. Pulmonary tuberculosis or consumption being regarded by the medical profession as an infectious and communicable disease and dangerous to the public health, it is ordered that every physician in this city attending any person having such disease shall forthwith report the same to the board of health, in the same manner as in the case of other contagious diseases, and every householder in whose family a case of pulmonary tuberculosis is known to exist, shall notify the board of health of the removal of the patient from the house or tenement, or of the removal of the family, giving the new address.

[Regulations, board of health, adopted Oct. 2, 1911.]

ORANGE, N. J.

GARBAGE AND REFUSE—CARE OF RECEPTACLES FOR.

11. Each and every can, box, or other receptacle in which garbage or other offensive or decaying household refuse shall be kept at any time or placed in readiness for collection by a scavenger, shall constantly be maintained, by the persons having charge thereof, in a reasonably clean and unoffensive condition. No such can, box, or other receptacle shall, while placed in readiness for collection by a scavenger, be filled to any point higher than the top of the sides of said receptacle. All such receptacles shall at all times when exposed out of doors be securely covered so that the contents thereof will be inaccessible to dogs, cats, and other domestic animals or fowls.

[Ordinance, board of health, adopted Oct. 2, 1911, as a supplement to the sanitary and plumbing code adopted Dec. 1, 1900.]

ST. PAUL, MINN.

COMMUNICABLE DISEASES—DISINFECTION OF WALLS AND CEILINGS.

Sec. 1. It shall be the duty of the commissioner of health of the city of St. Paul, when in his opinion the calcimine, wall paper, or other wall or ceiling covering in any room has become infected with a communicable disease, to order the owner or occupant of, or the person, persons, firm, or corporation in charge of such room to remove said calcimine, wall papering, or other wall or ceiling covering, and every such owner or occupant or such person, firm, or corporation in charge of such room, when so notified, shall immediately remove said calcimine, wall paper, or other wall or ceiling covering.

Sec. 2. Any person, firm, or corporation violating the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than $5 nor more than $25.

Sec. 3. This ordinance shall take effect and be in force from and after its passage and publication.

[Ordinance, adopted July 14, 1911.]

TORRINGTON, CONN.

NUISANCES.

SEC. 2. All persons who shall convey or cause to be conveyed through any street or portion of any street in this borough any offal, bones, grease, fat, or any putrid or offensive material shall use a conveyance acceptable to the board of health, and from the 1st of April to the 1st of December in each year such materials shall be carted in tight barrels with covers which shall be closed at all times except when open for the purpose of placing such material within the barrel or removing the same. During the months of May, June, July, August, and September said barrels shall be washed daily with hot water.

SEC. 3. The owner of every animal that shall die or be found dead in said borough, except where such animal has been killed for food and is fit for food, shall cause such animal to be immediately buried, at least 3 feet under ground, or carried beyond the borough limits, and shall forfeit and pay a penalty of not less than $5 nor more than $50 for every neglect or refusal so to do.

* * * * * * *

SEC. 5. No cattle or swine shall be kept within the limits of the borough without the licenses from the board of health, which board shall have power to grant licenses to suitable persons to keep cattle or swine in suitable places, provided that no licenses shall be granted to keep swine within 150 feet of the residence of any person other than the one to whom such license is granted.

SEC. 6. No person shall place, leave, or suffer to remain upon any premises in said borough any manure or fertilizing or refuse matter in such manner or condition as to be offensive to those residing in the neighborhood or passing in the street by odors arising therefrom.

SEC. 7. The board of health, when satisfied upon due examination that a cellar, room, tenement, or building in this borough occupied as a dwelling place has become by reason of the number of occupants, want of cleanliness, or other cause, unfit for such purpose and a cause of nuisance or sickness to the occupants or to the public, shall issue a notice in writing to the owner, or his agent, and occupants, requiring the premises to be put in proper condition, or if said board see fit, requiring the occupants to quit possession within such time as said board may deem reasonable.

SEC. 8. Every person who shall violate any provision of any ordinance of said borough now or hereafter in force for which no specific penalty is or shall be otherwise provided, shall forfeit and pay a penalty not exceeding $100 for every such violation, according to the nature and aggravation of the offense.

[Ordinance effective July 1, 1911.]

WILMINGTON, N. C.

WATER SUPPLY.—TO BE EXAMINED BY CITY CHEMIST.

Be it ordained by the council of the city of Wilmington, N. C., that this is an ordinance passed for the immediate preservation of the public health of the citizens of the city of Wilmington, N. C.

SEC. 1. That the office of city chemist is hereby created and established.

SEC. 2. That the duties of the city chemist shall be to analyze all waters used by the city of Wilmington and to have charge and control of all laboratories to be hereafter established for the purpose of examining chemically and bacteriologically all substances of any kind and description that may be required to be examined by the superintendent of health of the city of Wilmington or by the mayor or any member of the city council.

It shall also be his duty to examine any water when called upon to do so by any citizen of the city of Wilmington upon payment by said citizen to the said city chemist of the sum of $2 for each and every examination; said sum so received for any examination so made to be turned over to the city clerk and treasurer of the city of Wilmington.

It shall also be his duty to examine for any physician in the city of Wilmington any sputum, pus, or other secretions when called upon so to do, upon payment of which fees shall be turned over to the city clerk and treasurer of said city.

It shall also be the duty of the city chemist to supervise the chemical operation of the water plant of the city of Wilmington and to see that it is kept in a proper condition of efficiency at all times, and report to the council at least once a week an analysis of the water in said city and a statement of the operations and conditions of said city waterworks, and to do and perform all duties necessary to the up-keeping of an efficient waterworks.

[Ordinance adopted Jan. 23, 1912.]

SEWERS AND DRAINS—OFFICE OF INSPECTOR OF, CREATED.

SEC. 1. That the office of inspector of plumbing is hereby abolished and the office of inspector of sewers and drains is hereby created, and wherever the words "Inspector of plumbing" are found in the plumbing ordinance of the city of Wilmington the same are hereby stricken out and the words "Inspector of sewers and drains" are hereby inserted.

SEC. 2. That section 42 of the regulations for the government and construction of plumbing work in the city of Wilmington, N. C., under the plumbing ordinance be amended by adding the following:

To make inspection of the drainage of all houses and premises and of all sanitary sewers whenever required to do so by the superintendent of health.

To make surveys, maps, and profiles of all such house and premises drainage and sanitary sewers of the city of Wilmington that are now installed or that may hereafter be installed, when required to do so by the superintendent of health.

To have the supervision and direction of the maintenance, construction, and sanitation of all drainage installations within and without the buildings upon private premises in the city of Wilmington.

To report all defective privately maintained drains and all imperfect sanitary sewers and parts thereof to the superintendent of health when such drains and sewers shall be found to be in an unsanitary and defective condition.

To supervise and direct all repairs and cleansing of all private drains and all sanitary sewers in the city of Wilmington, and to inspect in person the laying of all sewer house connections and to require that they be laid in accordance with the health laws and regulations governing such installations.

[Ordinance amending plumbing ordinance adopted Dec. 26, 1911.]

REPORTS TO THE SURGEON GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

CEREBROSPINAL MENINGITIS.

TEXAS.

Surg. Guiteras reports the occurrence of 1 case of cerebrospinal meningitis at Galveston during the period from March 29 to 31.

The health officer at El Paso reports 2 cases with 2 deaths for the week ended March 23.

The health officer at San Antonio reports 7 cases with 2 deaths for the week ended March 23.

MISSISSIPPI.

Acting Asst. Surg. Watkins reports the presence of 1 case of cerebrospinal meningitis at Natchez March 31.

VIRGINIA.

The health officer at Roanoke reports the occurrence of 2 deaths from cerebrospinal meningitis April 4 and 1 case April 5.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAR. 23, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	2	1	New York, N. Y	17	9
Chicago, Ill	2	2	Omaha, Nebr	2	
Cincinnati, Ohio	4	6	Orange, N. J	1	1
Cleveland, Ohio	1		Pittsburgh, Pa	1	
El Paso, Tex	2	2	Providence, R. I		1
Jersey City, N. J	1		St. Louis, Mo	1	1
Kansas City, Kans	19		San Antonio, Tex	7	2
Malden, Mass		1	San Francisco, Cal		1
Nashville, Tenn	10	4	Saratoga Springs, N. Y		1
New Orleans, La	4	6	Springfield, Ill		1

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAR. 23, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md		1	New York, N. Y	50	18
Cincinnati, Ohio	4		Pittsburgh, Pa	7	1
Cleveland, Ohio	12	2	Plainfield, N. J	35	
Denver, Colo	5	1	Reading, Pa	1	
Harrisburg, Pa	1		St. Louis, Mo	13	
Hartford, Conn	1		San Francisco, Cal	4	1
Los Angeles, Cal	1	1	Yonkers, N. Y	1	
New Castle, Pa	1				

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,437 acres of land in Alameda County were covered with poison during the week ended March 23, 1912.

During the same period 5,840 acres of land in San Joaquin County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	5 squirrels.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Mar. 23, 1912	2	[1] 132	82	
Oakland	do	15	[2] 808	647	
San Francisco	do	19	[3] 1,725	1,309	
Washington:					
City—					
Seattle	do		1,036	982	

[1] Identified: Mus norvegicus 82, Mus musculus 48.

[2] Identified: Mus norvegicus 662, Mus rattus 1, Mus musculus 146, Mus alexandrinus 1.

[3] Identified: Mus norvegicus 861, Mus rattus 233, Mus musculus 418, Mus alexandrinus 213.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the same period 338 ground squirrels trapped or shot in Alameda County, Cal., were examined for plague infection. No plague-infected squirrel was found.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAR. 23, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Altoona, Pa		3	Nashville, Tenn		5
Aurora, Ill		2	New Castle, Pa	2	
Baltimore, Md		50	Newark, N. J		6
Binghamton, N. Y	3	1	New Bedford, Mass		6
Boston, Mass		42	New Orleans, La		10
Bridgeport, Conn		6	Newport, Ky	3	3
Brookline, Mass		1	Newton, Mass		1
Cambridge, Mass		6	New York, N. Y		160
Chelsea, Mass		1	Niagara Falls, N. Y		3
Chicago, Ill	53	145	Northampton, Mass		2
Cincinnati, Ohio		16	Oakland, Cal		11
Cleveland, Ohio	46	18	Oklahoma, Okla		3
Clinton, Mass		1	Omaha, Nebr		3
Coffeyville, Kans	1		Passaic, N. J		6
Danville, Ill		1	Pawtucket, R. I		4
Dayton, Ohio		2	Pittsburgh, Pa	34	39
Denver, Colo		3	Pittsfield, Mass		3
East Orange, N. J		2	Plainfield, N. J		2
Elizabeth, N. J		3	Pottstown, Pa		2
El Paso, Tex	2	2	Providence, R. I		11
Evansville, Ind		2	Reading, Pa		4
Everett, Mass		2	Roanoke, Va		1
Fall River, Mass		7	Rockford, Ill		2
Fort Wayne, Ind		3	Saginaw, Mich		2
Gloucester, Mass		2	Salem, Mass		3
Grand Rapids, Mich		3	San Antonio, Tex		8
Harrisburg, Pa	1	2	San Diego, Cal	3	3
Hartford, Conn		9	San Francisco, Cal	18	
Homestead, Pa		1	Schenectady, N. Y	8	4
Kalamazoo, Mich	3	1	South Bethlehem, Pa	3	2
Knoxville, Tenn		1	South Omaha, Nebr	1	1
La Crosse, Wis	1		Springfield, Mass		4
La Fayette, Ind		1	Superior, Wis		1
Lancaster, Pa	6		Taunton, Mass		5
Lawrence, Mass		9	Toledo, Ohio		3
Logansport, Ind		2	Waltham, Mass		1
Los Angeles, Cal		3	Washington, D. C		21
Lowell, Mass		5	Wheeling, W. Va		3
Lynchburg, Va		2	Wilkesbarre, Pa	1	4
Malden, Mass		1	Williamsport, Pa		1
Manchester, N. H	3	3	Wilmington, Del		6
Medford, Mass		2	Wilmington, N. C	11	1
Melrose, Mass		1	Yonkers, N. Y		3
Montclair, N. J		2	Zanesville, Ohio		3
Montgomery, Ala		1			

POLIOMYELITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAR. 23, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	1		New York, N. Y	12	1
Cincinnati, Ohio	1		Omaha, Nebr	1	
Duluth, Minn	1		Springfield, Mass	1	
Kalamazoo, Mich	1				

TETANUS.

During the week ended March 23, 1 death from tetanus was reported in New York, N. Y., and 1 case with 1 death in San Francisco, Cal.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAR. 23, 1912.

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	252	14	....	10	1	27	1	....	....	49	31	6	1
Boston, Mass	670,585	241	30	....	173	4	30	1	....	....	53	18	5	1
Chicago, Ill	2,185,283	713	127	21	149	4	224	13	3	....	186	81	17	2
Cleveland, Ohio	560,663	154	29	1	82	1	29	....	1	....	31	17	4	...
New York, N. Y	4,766,883	1,534	308	25	2,015	29	502	22	....	....	406	181	36	4
Pittsburgh, Pa	533,905	184	16	1	31	4	16	....	1	....	38	15	8	1
St. Louis, Mo	687,029	225	25	....	50	....	34	2	1	....	41	24	2	1
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	138	25	1	35	....	16	1	....	....	9	12	...	...
Cincinnati, Ohio	364,463	153	11	....	12	....	53	2	1	....	49	24	2	1
Detroit, Mich	465,766	171	8	....	....	....	25	1	4	....	....	....	...	...
Los Angeles, Cal	319,198	127	6	1	5	....	6	....	2	....	18	21	....	1
Milwaukee, Wis	373,857	101	10	3	65	....	50	3	....	....	14	7	17	5
Newark, N. J	347,469	107	15	1	....	2	28	....	1	....	30	13	2	...
New Orleans, La	339,075	129	9	....	1	....	10	....	10	....	40	15	4	..
San Francisco, Cal	416,912	167	5	1	126	3	1	....	....	....	29	20	4	...
Washington, D. C	331,069	146	4	....	24	1	4	....	....	....	31	25	5	...
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	61	4	....	5	....	8	1	....	....	....	14	...	...
Jersey City, N. J	267,779	70	12	1	22	....	11	....	....	....	20	9	...	...
Providence, R. I	224,326	95	11	1	33	6	10	1	....	....	1	6	2	...
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	33	1	....	4	....	6	....	....	....	3	1	...	...
Cambridge, Mass	104,839	33	4	....	27	....	2	....	....	....	2	5	2	...
Dayton, Ohio	116,577	40	2	....	6	....	1	....	12	....	1	4	...	..
Fall River, Mass	119,295	33	1	....	1	....	1	....	....	....	3	2	..	..
Grand Rapids, Mich	112,571	25	....	....	....	....	5	....	1	....	4	3	9	1
Lowell, Mass	106,294	28	3	1	17	1	8	....	....	....	3	1	1	...
Nashville, Tenn	110,364	49	....	....	2	....	1	....	....	....	9	3	1	..
Oakland, Cal	150,174	49	8	1	3	....	3	....	....	....	9	4	3	2
Omaha, Nebr	124,096	27	....	....	1	....	1	....	....	....	....	2	...	...
Toledo, Ohio	168,497	50	6	1	25	1	7	1	....	....	....	5	1	1
Worcester, Mass	145,986	47	4	....	9	....	11	....	....	....	9	2	..	...
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	17	3	....	....	....	....	....	....	....	....	1	...	...
Bayonne, N. J	55,545	19	....	....	2	....	7	....	....	....	2	1	1	1
Brockton, Mass	56,878	23	1	....	55	....	5	....	....	....	4	....	..	..
Camden, N. J	94,538	....	5	1	....	....	3	....	....	....	6	...	1	..
Duluth, Minn	78,466	9	1	....	....	....	4	....	....	....	11	3	1	.
Elizabeth, N. J	73,409	23	1	....	7	....	2	....	....	....	....	3		.
Evansville, Ind	69,647	....	3	....	1	....	1	....	1	....	2	5	1	2
Fort Wayne, Ind	63,933	28	2	....	10	....	....	....	....	....	1	4	...	..
Harrisburg, Pa	64,186	24	1	....	62	....	1	....	....	....	4	1	...	...
Hartford, Conn	98,915	40	4	1	6	....	5	....	....	....	4	1	.	..
Hoboken, N. J	70,324	....	2	....	1	....	....	1	....	....	4	....	.	.
Jacksonville, Fla	57,699	....	2	....	16	....	....	....	3	....	2	2	1	1
Johnstown, Pa	55,482	19	....	....	....	....	1	....	....	2	1	....	.	...
Kansas City, Kans	82,331	....	1	....	2	....	1	....	2	....	5	...	1	...
Lawrence, Mass	85,892	33	....	....	1	....	....	....	....	....	1	4	1	.
Lynn, Mass	89,336	18	3	....	18	....	7	....	....	....	3	2	1	..
Manchester, N. H	70,063	27	2	....	20	....	....	....	3	....	1	1	.	..
New Bedford, Mass	96,652	41	4	....	51	....	7	....	....	....	7	3	1	1
Oklahoma City, Okla	64,205	18	1	....	....	....	....	....	....	....	....	2		.
Passaic, N. J	54,773	22	1	....	23	....	....	1	....	....	3	3	.	
Pawtucket, R. I	51,622	....	....	....	....	1	....	....	....	....	....	1		.
Reading, Pa	96,071	28	4	....	5	....	2	....	....	....	2	2	3	.

MORBIDITY AND MORTALITY—Continued.

***Morbidity and mortality table, cities of the United States, for week ended Mar. 23, 1912*—Continued.**

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Saginaw, Mich	50,510		4						1		7	6	3	2
San Antonio, Tex	96,614	25	1		16		3		3			14	1	
Schenectady, N. Y	72,826	25			43		2				4	7	1	1
South Bend, Ind	53,684	10	1		1		1						5	
Springfield, Ill	51,678	19	3				1					3	3	1
Springfield, Mass	88,926	39	8	2	24		4				1	3	1	
Trenton, N. J	96,815	46	3		1		1				7	3		
Wilkes-Barre, Pa	67,105	22	3	1	6		2				7			
Wilmington, Del	87,411	30										2		2
Yonkers, N. Y	79,803	22	8		5		9				2	1		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	8			2									
Aurora, Ill	29,807	6	1											
Berkeley, Cal	40,434	8	2		18						2			
Binghamton, N. Y	48,443	17			2						4	1		
Brookline, Mass	27,792		1		4		1							
Chelsea, Mass	32,452	4	3		5									
Chicopee, Mass	25,401	3			3		1							
Danville, Ill	27,871	13			2							1		
Dubuque, Iowa	38,494	10					1						1	
East Orange, N. J	34,371	8			3		3				2	2		
Elmira, N. Y	37,176	14			2									
El Paso, Tex	39,279	27					3		2			7		
Everett, Mass	33,484	10	1		2	1	2				3			
Fitchburg, Mass	37,826	9									3			
Haverhill, Mass	44,115	17	1		9		2				1		1	
Kalamazoo, Mich	39,437	23	1	1			10		10		1	1	1	1
Knoxville, Tenn	36,346	16			13				4		1	4		
La Crosse, Wis	30,417	7	3				3				1	2		
Lancaster, Pa	47,227				99		2							
Lexington, Ky	35,099	10			3						6	2		
Little Rock, Ark	45,941		2		3				4					
Lynchburg, Va	29,494	12	1		55		6	1			2	1		
Malden, Mass	44,404	10			9		3				3	1		
Montgomery, Ala	38,136	14			4		1					1		
Newcastle, Pa	36,280		4		1								7	
Newport, Ky	30,309	16	1				5				2	2		
Newton, Mass	39,806	12			36		1				1			
Niagara Falls, N. Y	30,445	13	1				2					1	1	
Norristown, Pa	27,875	6	2		28								1	
Orange, N. J	29,630	11	2		1						1	1		
Pasadena, Cal	30,291	11									2	2		1
Pittsfield, Mass	32,121	16	2				1				1	3		
Portsmouth, Va	33,190	17	1				1		5					
Racine, Wis	38,002	13	4				2							
Roanoke, Va	34,874	14	3		23				1		2	3	2	
Rockford, Ill	45,401	24										1	51	4
Salem, Mass	43,697	13			3		2					2		
San Diego, Cal	39,578	10			11						5	5		2
South Omaha, Nebr	26,259	3												
Superior, Wis	40,384	16	1									2		1
Taunton, Mass	34,259											2		
Waltham, Mass	27,834	9			17									
West Hoboken, N. J	35,403	5	1		2						1	1		
Wheeling, W. Va	41,641	17	3	2	4		2					1	2	
Williamsport, Pa	31,860	10			3							1		
Wilmington, N. C	25,748	11			14				3		1			
York, Pa	44,750		2		2						1			
Zanesville, Ohio	28,026	12										1	1	

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Mar. 23, 1912—Continued.

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	7			2						1			
Ann Arbor, Mich	14,817	9					1						1	
Beaver Falls, Pa	12,191	0			1		3						1	
Bennington, Vt		4									2	2		
Braddock, Pa	17,759	8	2	1	1									1
Butler, Pa	20,782	6									10		1	
Cambridge, Ohio	11,327	6			3									
Camden, S. C					1									
Carbondale, Pa	17,040	7	3		11		2							
Clinton, Mass	13,075	5	2				1				2			
Coffeyville, Kans	12,687		2						1		1			
Columbus, Ga	20,554	4												
Columbus, Ind		3	1						3					
Concord, N. H	21,497	6			16									
Cumberland, Md	21,839	11			2		1				2	1	2	1
Dunkirk, N. Y		4	2											
Galesburg, Ill	20,089	2	1										1	
Gloucester, Mass	24,398	9										1		
Harrison, N. J	14,498	3	1		1									
Homestead, Pa	18,713	4	3									1		
Kearny, N. J	18,659	2			4		1							
La Fayette, Ind	20,081	6			2									
Logansport, Ind	19,050	8			1						2			
Marlboro, Mass	14,577	3										1		
Marinette, Wis	14,610	3											1	
Massillon, Ohio		2			1		3							
Medford, Mass	23,156	5	7		10		2							
Melrose, Mass	15,715	7			11		2							
Moline, Ill	24,199	5											1	
Montclair, N. J	21,150	6			3		1				2		1	
Morristown, N. J	12,507	6	1		8		2				2		1	
Nanticoke, Pa	18,507	11	1		2				2					
Newburyport, Mass	19,240	4									2			
North Adams, Mass	22,012	2			2						4			
Northampton, Mass	19,431	9			7		1				1	1		
Ottumwa, Iowa	22,012	2										1		
Palmer, Mass		2												
Plainfield, N. J	22,050	13			35									1
Pottstown, Pa		8			2							1		
Sandusky, Ohio	19,989	13	1		9								1	
Saratoga Springs, N. Y		9										1		
South Bethlehem, Pa	19,973	9			2		2					1		
Steelton, Pa	14,246	2	1								1			
Warren, Pa	11,081	3					1				2	2		
Wilkinsburg, Pa	18,924	7			1		1				1			
Woburn, Mass	15,308	10			3		1					1		

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

SMALLPOX IN THE UNITED STATES—Continued.

REPORTS RECEIVED DURING WEEK ENDED APR. 12, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
California:				
Counties—				
Butte	Feb. 1-29	3		
Contra Costa	do	1		
Fresno	do	13		
Los Angeles	do	19	1	
Mendocino	do	3		
Nevada	do	4		
Placer	do	2		
Riverside	do	13		
San Bernardino	do	23		
Sacramento	do	1		
San Diego	do	1		
Shasta	do	1		
Siskiyou	do	2		
Tulare	do	13		
Total for State		99	1	
Colorado:				
Counties—				
Boulder	Mar. 1-31	3		
Delta	do	12		
Denver	do	3		
El Paso	do	2		
Huerfano	do	2		
Las Animas	do	1		
Montrose	do	3		
Ouray	do	1		
Pueblo	do	1		
Rio Grande	do	6		
Total for State		34		
* Louisiana:				
New Orleans	Feb. 28-Mar. 3	14		
Maine:				
Counties—				
Androscoggin	Feb. 1-29	48		
Cumberland	do	9		
Kennebec	do	2		
Lincoln	do	1		
Penobscot	do	9		
Sagadahoc	do	2		
Total for State		71		
Androscoggin	Mar. 1-31	43		
Kennebec	do	2		
Lincoln	do	6		
Oxford	do	3		
Penobscot	do	1		
Sagadahoc	do	4		
Somerset	do	15		
Total for State		74		
Maryland				No case in February or March.
Massachusetts:				
Counties—				
Bristol	Mar. 1-31	1		
Essex	do	1		
Franklin	do	2		
Total for State		4		
*Missouri:				
St. Louis	Mar. 24-31	4		
Montana:				
Counties—				
Cascade	Jan. 1-31	6		
Chouteau	do	3		
Custer	do	2		
Dawson	do	1		
Fergus	do	21		
Missoula	do	5		
Ravalli	do	5		
Total for State		43		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended Apr. 12, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Montana—Continued.				
Counties—Continued.				
Cascade	Feb. 1-29	6		
Chouteau	do	7		
Fergus	do	6		
Lewiston	do	6		
Lewis and Clark	do	6		
Missoula	do	2		
Total for State		33		
North Carolina:				
Counties—				
Anson	Feb. 1-29	81		
Beaufort	do	4		
Bladen	do	1		
Buncombe	do	4		
Columbus	do	10		
Craven	do	5		
Durham	do	2		
Edgecombe	do	1		
Granville	do	2		
Haywood	do	42		
Jackson	do	4		
Lee	do	1		
Lincoln	do	6		
Macon	do	2		
Madison	do	42		
Mecklenburg	do	3		
Montgomery	do	6		
New Hanover	do	15		
Swain	do	7		
Vance	do	64		
Warren	do	9		
Total for State		311		
*South Carolina:				
Charleston	Mar. 1-31	3		
Grand total for the United States		690	1	

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

California.—Month of October, 1911. Population, 2,377,589. Total number of deaths from all causes 2,683, including diphtheria 22, measles 1, scarlet fever 7, tuberculosis 352, typhoid fever 51. Cases reported: Diphtheria 134, measles 221, scarlet fever 140, typhoid fever 521.

Iowa.—Month of January, 1912. Population, 2,224,771. Total number of deaths from all causes 2,002, including diphtheria 16, measles 2, scarlet fever 9, tuberculosis 140, typhoid fever 20.

Minnesota.—Month of December, 1911. Population, 2,075,708. Total number of deaths from all causes 1,607, including diphtheria 29, measles 2, scarlet fever 15, smallpox 2, tuberculosis 189, typhoid fever 26.

Utah.—Month of February, 1912. Population, 373,351. Total number of deaths from all causes 261, including diphtheria 4, tuberculosis 10. Cases reported: Diphtheria 44, measles 120, scarlet fever 157, smallpox 279, tuberculosis 17 (incomplete), typhoid fever 11.

FOREIGN AND INSULAR.

SANITARY SURVEILLANCE OF VESSELS AT CENTRAL AMERICAN AND WEST INDIAN PORTS.

The Department of State has been requested to inform the American consular officers at Bridgetown, Barbados; Castries, St. Lucia; Port of Spain, Trinidad; St. Thomas; and Curacao that the quarantine officers at United States ports will accept as contributory evidence as to the sanitary status of vessels arriving from the abovenamed ports certificates of fumigation performed by physicians recommended by the American consular officers, when the said fumigation certificates are viséed by the latter officials. The quarantine officers at the various ports on the mainland of the United States have been notified accordingly.

Acting Asst. Surg. R. P. Ames has been detailed to keep under constant surveillance, for the purpose of determining their sanitary status, the ports of Tela, Ceiba, and Puerto Cortes in Honduras, and Puerto Barrios in Guatemala, during the current close quarantine season.

AUSTRALIA.

Sydney—Examination of Rats.

The following information was taken from bulletins issued by the department of health of New South Wales: During the three weeks ended February 24, 915 rats were examined for plague infection. No plague-infected rat was found.

The last case of human plague was reported May 29, 1909.

The last plague-infected rat was found April 25, 1910.

CHILE.

Yellow Fever at Tocopilla.

The American consul at Valparaiso reported April 3 the occurrence of 38 cases of yellow fever with 12 deaths at Tocopilla.

Tocopilla is a small maritime town situated in the Province of Antofagasta.

CHINA.

Hongkong—Smallpox—Plague—Plague-infected Rats.

Surg. Brown reports: During the two weeks ended February 24, 10 cases of plague, with 9 deaths, and 123 cases of smallpox, with 98 deaths, were reported in Hongkong.

During the same period 3,811 rats were examined for plague infection. Three plague-infected rats were found.

CUBA.

Transmissible Diseases.

The following statement of transmissible diseases in the island of Cuba was issued by the sanitary department:

MONTH OF FEBRUARY, 1911.

Diseases.	New cases.	Deaths.	Remaining under treatment.
Tuberculosis	133	214	1,117
Leprosy	6	7	347
Malaria	129	13	156
Typhoid fever	51	6	56
Diphtheria	68	8	20
Scarlet fever	27	3	14
Measles	81	1	40
Varicella	32	0	28
Tetanus in new born	14	13	2
Beri-beri	0	0	1
Filariasis	0	0	2
Dengue	1	0	2

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911, a fatal case February 9, 1912, and 2 fatal cases February 25, 1912.

The last plague-infected rats reported found at Honokaa were 49, found during the week ended March 2, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

Week ended Mar. 16, 1912.

Total rats and mongoose taken	441
Rats trapped	435
Mongoose trapped	6
Rats examined bacteriologically	378
Classification of rats trapped:	
Mus alexandrianus	47
Mus musculus	105
Mus norvegicus	32
Mus rattus	251
Average number of traps set daily	1,720

Mosquito-Eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy, who is detailed as sanitary adviser to the governor of the Territory of Hawaii:

Mosquito-eradication measures conducted at Honolulu from Feb. 26 to Mar. 2, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in—	Ordered cleaned.	Oiled.	Drained.	Emptied.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.
Gutters, house	1,669	29	47	....	24	....	....	13	....	....
Gutters, street	297	22	....	55	10	....	....	....	....	....
Standing water	627	81	11	134	36	....	17	....	....	9
Cesspools	745	25	7	46	....	....	3	5	....	....
Privy vaults	1,411	7	2	35	....	....	....	17	....	....
Holes and low places	914	135	3	98	82	....	131	....	....	12
Catch basins	630	23	19	74	....	1	....	3	....	....
Leaky fixtures	59	....	....	....	....	....	....	32	....	....
Plants, etc	108	....	....	....	....	....	....	....	....	....
Swamps	115	14	1	8	4	....	....	....	....	....
Ponds	31	6	....	11	....	....	....	....	....	6
Troughs and tanks	264	18	12	....	....	10	....	....	....	10
Tubs or other receptacles	950	94	8	....	....	197	....	....	....	....
Tin cans and bottles	970	164	....	....	....	453	....	....	....	....
Water barrels	440	100	18	....	....	120	....	....	....	32
Vacant houses	43	....	....	....	....	....	....	....	....	....
Grease traps	156	....	3	....	....	....	....	....	....	....

Gutters removed or perforated	28
Tin cans, bottles, etc., collected, wagon loads	28
Rice plantations inspected	6
Legal notices to abate nuisances served	137
Nuisances abated	130

Mosquito-eradication measures conducted at Honolulu from Mar. 4 to 9, 1912.

Inspections of—	Total inspections.	Larvæ found in—	Ordered cleaned.	Oiled.	Drained.	Emptied.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.
Gutters, house	926	21	25	....	....	....	....	8	....	....
Gutters, street	228	26	....	92	3	....	....	....	....	....
Standing water	436	77	5	51	25	....	19	....	....	....
Cesspools	628	21	4	40	....	....	1	7	....	....
Privy vaults	1,161	6	4	33	....	....	....	11	....	....
Holes and low places	621	115	7	89	....	....	218	....	....	....
Catch basins	532	38	31	73	....	....	....	5	....	....
Leaky fixtures	69	4	....	....	....	....	....	29	....	....
Plants, etc	24	17	....	....	....	....	....	....	....	....
Swamps	116	1	1	3	17	....	....	....	....	....
Ponds	30	13	....	3	1	....	....	....	....	11
Troughs and tanks	229	13	7	....	....	26	....	....	....	8
Tubs or other receptacles	293	49	....	....	....	113	....	....	....	....
Tin cans and bottles	1,364	145	....	....	....	11,156	....	....	....	....
Water barrels	394	66	8	....	....	86	....	....	29	21
Washhouses	129	5	....	....	....	....	....	5	....	....
Grease traps	151	....	....	....	....	....	....	....	....	....

Rice plantations inspected	6
Wagon loads of tin cans collected	38

Gutters were removed or perforated on 42 buildings.

Rice Plantations as Breeding Places of Mosquitoes.

Dr. McCoy reports: In connection with the antimosquito campaign special attention has been given to rice plantations as breeding places of mosquitoes. It has been found that at the plowing season rice plantations afford excellent breeding places. Many acres have been found in which larvæ and pupæ were present in enormous numbers. The only way to deal with the situation is to require the liberal flooding of the fields and the stocking of them with larvæ-destroying fish. A special inspector has been appointed for this work. The regulation originally formed by the board of health failed to cover the rice plantations, its operations being limited to the territory within 1 mile from Honolulu Harbor. A new regulation has been passed which extends the zone to 5 miles from the harbor, which is ample to cover the rice plantations in the vicinity of the city.

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended February 17, 57 deaths from cholera and 45 from plague were reported at Calcutta; in all Bengal, 3,377 cases of plague with 3,180 deaths; in all India, 16,275 cases of plague with 14,334 deaths.

ITALY.

Naples—Examination of Emigrants.

Passed Asst. Surg. Robinson reports:

Vessels inspected at Naples and Palermo during the week ended Mar. 16.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Mar. 13	Hamburg	New York	565	60	780
13	America	Philadelphia	1,680	190	2,180
14	Carpathia	New York			
14	Canada	do	1,296	170	1,080
15	Kaiserin Auguste Victoria	do	1,818	220	2,480
16	Adriatic	do	1,774	280	2,850
	Total		7,065	920	9,310

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Mar. 14	Oceania	New York			
15	Hamburg	do	328	110	65
15	Canada	do	609	420	250
	Total		937	530	315

MEXICO.

Typhus Fever.

At Aguascalientes Consul Schmutz reports the occurrence of 3 cases of typhus fever with 2 deaths during the week ended March 23.

At Mexico City Consul Guyant reports 193 cases with 35 deaths for the four weeks ended February 24.

WEST INDIES.

Trinidad—Plague at Port of Spain.

The American consul reports the occurrence of 2 cases of plague at Port of Spain April 2.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING THE WEEK ENDED APR. 12, 1912.

These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Calcutta	Feb. 11-17		57	
Do	Feb. 18-24		86	

YELLOW FEVER.

Brazil:				
Ceara	Feb. 1-29		4	
Pernambuco	Feb. 1-15		7	
Canal Zone:				
Culebra Island quarantine	Jan. 1-31	1		From a vessel from Guayaquil.
Chile:				
Tocopilla	Apr. 11	38	12	

PLAGUE.

Brazil:				
Pernambuco	Feb. 1-15		1	
Chile:				
Iquique	Feb. 26-Mar. 9	7	2	
China:				
Hongkong	Feb. 18-24	4	3	
India:				
Calcutta	Feb. 11-17		88	
Mauritius	Jan. 19-25	5		

SMALLPOX.

Argentina:				
Buenos Aires	Jan. 1-31		2	
Rosario	Dec. 1-31		7	
Do	Jan. 1-31		2	
Austria-Hungary:				
Galicia	Feb. 25-Mar. 2	1	1	
Tyrol	Mar. 3-9	2		
Brazil:				
Manaos	Mar. 3-16		11	
Pernambuco	Feb. 1-15		66	
Canada:				
Quebec	Mar. 24-30	5		
Chile:				
Valparaiso	Mar. 3-9	25		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during the week ended Apr. 12, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Hankow	Feb. 11-17	1		
Hongkong	Feb. 18-24	70	50	
France:				
Havre	Mar. 10-16	1	4	
India:				
Calcutta	Feb. 11-17		3	
Italy:				
Turin	Mar. 11-17	1		
Mexico:				
Salina Cruz	Mar. 23			Present in vicinity.
Tapachula	Jan. 1-31		4	
Portugal:				
Lisbon	Mar. 13-19	2		
Teneriffe:				
Santa Cruz	Mar. 3-9		2	

REPORTS RECEIVED FROM DEC. 30, 1911, TO APR. 5, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 26.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total Sept. 24-Dec. 26: Cases, 2,070; deaths, 1,508.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India:				
Bassein	Jan. 14-Feb. 17	107	88	
Calcutta	Nov. 5-Feb. 10		545	
Madras	Nov. 26-Mar. 2	526	428	Madras Presidency, Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,646. Jan. 1-31: Cases, 13,411; deaths, 8,509.
Negapatam	Jan. 14-Feb 17		77	
Rangoon	Oct. 1-Dec. 31	62	52	
Indo-China:				
Saigon	Nov. 20-Feb. 12	1,487	1,035	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 5, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Jan. 27		755	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21	7	6	In vicinity.
Adana	Dec. 2-6	16	5	
Aleppo	Jan. 26-Mar. 2	31	19	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Bahia	Mar. 23			Present.
Ceara	Jan. 1-31		1	
Manaos	Nov. 19-Mar. 2		32	
Para	Dec. 9-16	1	1	
Pernambuco	Jan. 1-Mar. 31		3	
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Feb. 29	13	6	
Guayaquil	Nov. 16-Feb. 29	118	54	
Huigra	Feb. 1-29			1 case.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 5, 1912.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Ecuador—Continued.				
Milagro	Feb. 1-29	16	7	
Naranjito	do	2	2	
Yaguachi	do			1 case.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb. 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida	Nov. 12-Mar. 23	20	9	Total Aug. 1-Mar. 23: Cases, [illegible]; deaths, 29.
Puerto Mexico (Coatzocoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Feb. 15	30	13	
Macuto	Mar. 16-19	1	1	
Maiquetia	Feb. 24-Mar. 9	3	1	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Azores:				
Fayal	Jan. 10			Still present.
Terceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Feb. 17	18	12	
Pernambuco	Oct. 1-Jan. 31		7	
Rio de Janeiro	Nov. 12-Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12-Mar. 27	12	6	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9-Feb. 17	26	23	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1,517; deaths, 1,324.
Pasoeroean Residency, Malang District.	Nov. 12-Feb. 17	93	51	
Soerobaya	Oct. 17-27	2		
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Reports not available because of revolution.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1-Mar. 7	37	23	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	Jan. 1-Mar. 6	26	15	
Behera	Jan. 1-25	3	2	Sept. 11-16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16-28	11	5	
Fayoum	Jan. 1-26	1		
Galioubeh	Jan. 1-Feb. 18	2	2	Oct. 5-Dec. 26: Cases, 1.
Garbieh	Jan. 1-Mar. 4	15	6	
Girgeh	Feb. 28	1	1	
Kena	Jan. 1-Mar. 7	26	17	Nov. 20-Dec. 13: Cases 2: deaths, 3.
Menouf	Feb. 2-Mar. 7	3	1	
Minieh	Jan. 1-Feb. 25	11	2	Dec. 13: Cases, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 5, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-Mar. 2	215	182	
Calcutta	Nov. 11-Feb. 10		136	
Karachi	Nov. 26-Mar. 2	242	208	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Dec. 31	50	50	
Bombay Presidency and Sind.	Oct. 29-Jan. 27	46,419	33,705	
Madras Presidency	do	7,157	5,622	
Bengal	do	10,325	7,878	
United Provinces	do	27,664	24,216	
Punjab	do	2,336	1,741	
Burma	do	566	494	
Eastern Bengal and Assam	Jan. 1-6	1	1	
Central Provinces	Oct. 29-Jan. 27	11,481	9,027	
Coorg	do	86	50	
Mysore State	do	6,963	5,309	
Hyderabad State	do	19,267	17,731	
Central India	do	5,754	4,764	
Rajputana and Ajmere Merwara.	do	628	504	
North West Province	do	2	2	Total for India, Oct. 29-Jan. 27: Cases 13,649; deaths, 111,044. Total, year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Feb. 12	27	2	
Mauritius	Nov. 3-Jan. 18	54	31	
Persia:				
Buchir	Feb. 4-24	19	5	
Peru:				
Departments—				
Callao	Oct. 1-21	1		In November 1 case; in January 3 cases with 2 deaths.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Mar. 6, 34 cases in the lazaretto at Trujillo.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Jan. 27		3	
South Africa:				
Durban	Jan. 14-Feb. 21	8	6	
Straits Settlements:				
Singapore	Nov. 5-Feb. 10	26	23	
Turkey in Asia:				
Jiddah	Jan. 13-Feb. 2	6	1	
Venezuela:				
Caracas	Mar 12	1		
West Indies:				
Trinidad	Apr. 2	2		

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Feb. 26	16	7	And vicinity.
Argentina:				
Buenos Aires	Oct. 1-31		6	
Rosario	Oct. 1-Nov. 30		31	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	2		
Budapest	Jan. 4-10	25		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 5, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary—Contd.				
Galicia	Dec. 24–Feb. 24	2		
Krain	Jan. 14–20	7		
Trieste	Dec. 3–9	1		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14–17	2		
Brazil:				
Bahia	July 1–31		1	
Pernambuco	Oct. 1–Jan. 31		569	
Rio de Janeiro	Nov. 26–Feb. 24	18	1	
Santos	Dec. 12–23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26–Mar. 16	5		
Nelson	Dec. 24–30	1		
Victoria	Feb. 4–10	1		
Manitoba—				
Winnipeg	Jan. 14–20	1		
Ontario—				
Kingston	Dec. 19–23	1		
Ottawa	Dec. 10–Mar. 23	91		
Sarnia	Oct. 17–Mar. 23	43		
Toronto	Jan. 6–Feb. 10	2	1	
Windsor	Feb. 4–Mar. 16	8		
Quebec—				
Montreal	Dec. 17–Mar. 16	22		
Quebec	Dec. 10–Mar. 23	257	2	
Ceylon:				
Colombo	Nov. 12–Feb. 10	3		And vicinity.
Chile:				
Iquique	Dec. 10–Jan. 20	3	1	
La Serena	Nov. 21–30	14		
Santiago	Nov. 1–30	685	343	
Talcahuano	Nov. 26–Dec. 23	14	3	
Valparaiso	Dec. 3–9	43		Feb. 17—Decreasing.
China:				
Canton	Nov. 11–Dec. 30	40	6	
Chenghai	Jan. 29–Feb. 10			Present.
Chungking	Nov. 18–Feb. 3			Do.
Hankow	Jan. 21–Feb. 3	1	1	
Hongkong	Nov. 12–Feb. 17	350	256	
Kityang	Jan. 21–Feb. 3			Do.
Nanking	Dec. 10–Mar. 2			Do.
Shanghai	Dec. 11–Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.
Cuba:				
Habana	Dec. 19–Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10–Feb. 11	4		
Port Said	Jan. 30–Feb. 4	1		
France:				
Marseille	Jan. 1–Feb. 29		4	Nov. 1–30, 1 death.
Paris	Dec. 3–Mar. 9	106	1	
Germany				Total, Dec. 31–Mar. 16: Cases, 46.
Hamburg	Jan. 21–27	1		
Gibraltar	Feb. 27–Mar. 3	1		
Great Britain:				
Bristol	Jan. 29–Feb. 3	2		
London	Jan. 14–Feb. 24	6	1	
Southampton	Mar. 3–9	1		
West Hartlepool	Feb. 18–Mar. 9	2		
India:				
Bombay	Nov. 19–Mar. 2	393	177	
Calcutta	Nov. 19–Feb. 10		20	
Madras	Nov. 26–Mar. 2	113	50	
Rangoon	Oct. 1–Dec. 31	61	17	
Indo-China:				
Saigon	Nov. 13–Feb. 12	28	1	
Italy:				
Genoa	Dec. 1–Jan 31	33	2	
Leghorn	Dec. 16–Mar. 16	95	1	
Messina	Nov. 19–Jan. 31		6	
Naples	Dec. 3–Mar. 9	88	1	
Palermo	Nov. 26–Mar. 16	2,569	873	
Turin	Jan. 15–Feb. 25	6		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 5, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	2	1	Jan. 20, 1 case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12-18	1		
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Java:				
Batavia	Nov. 12-Feb. 10	35	11	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Mar. 9	5	2	
Juarez	Dec. 19-Mar. 9	14	5	
Magdalena	Dec. 23-Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-Mar. 19		11	Mar. 16, 25 cases in the lazaretto.
Mexico	Nov. 26-Feb. 17	135	67	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Dec. 30	3	1	
Tampico	Dec. 1-Mar. 1		14	
Tapachula	Nov. 1-Dec. 31		14	
Portugal:				
Lisbon	Dec. 9-Mar. 9	47		
Russia:				
Batum	Dec. 1-31	1		
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Feb. 10	30	10	
Odessa	Nov. 26-Feb. 24	21	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-Jan. 27	16		Oct. 1-Nov. 30; deaths, 2.
St. Petersburg	Nov. 19-Feb. 3	122	22	
Warsaw	Nov. 5-Dec. 2		185	
Siam:				
Bangkok	Nov. 5-Jan. 27		1,326	
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-Feb. 10	3		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Barcelona	Feb. 6-12		1	
Cadiz	Nov. 1-Jan. 31		22	
Madrid	Dec. 1-Jan. 31		3	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-Feb. 29		8	
Valencia	Dec. 3-Mar. 9	252	12	
Straits Settlements:				
Singapore	Nov. 19-Feb. 10	25	9	
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Mar. 2		44	
Turkey in Asia:				
Beirut	Dec. 3-Mar. 9	1,240	97	
Turkey in Europe:				
Constantinople	Dec. 4-Mar. 10		95	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aguascalientes	Mar. 24	40,000	45	1									2	
Amsterdam	Mar. 26	581,993	120	16									2	4
Aix-la-Chapelle	Mar. 2	157,463	51										1	3
Barmen	Mar. 16	170,900		2								1		
Berlin	Mar. 9	2,072,478	594	83							5	20	6	6
Bradford	Mar. 16	289,618	98	8								3	2	
Bremen	Mar. 2	246,850	82	15							3	1	14	
Do	Mar. 9		69	11							3		11	
Brunswick	Mar. 2-9	145,000		7							13		11	
Budapest	Mar. 2	1,000,000								1	5		1	
Do	Mar. 9									1	3	4	2	1
Calcutta	Feb. 17	890,493	477	29	45	57		3					2	
Do	Feb. 24		541	22	48	86							1	
Chemnitz	Mar. 9	299,000	75	8								1		
Coburg	do	24,272	8									1		
Cologne	do	526,639	142	23						1	2	2	1	2
Do	Apr. 6		152	33							1	2	2	3
Dalney	Mar. 2	45,209	9								1			
Dresden	do	556,400	145	20								3		4
Do	Mar. 9		170	25							2	5		
Dundee	Mar. 16	171,006	52	6						1			1	
Erfurt	Mar. 2	126,010	54	6								2		
Do	Mar. 9		46	3								5		
Frankfort-on-the-Main	Mar. 2	423,600	91									1		
Do	Mar. 10		122									6		1
Genoa	Mar. 15	272,077	125					12		3		7		
Georgetown	Mar. 6	57,577	54	3						2				
Glasgow	Mar. 22	785,600	258							1	2	3	24	1
Gothenburg	Mar. 16	170,100	41	9								1	1	
Halifax	Mar. 22	46,000	16	1								1		
Do	Mar. 16	136,159	71	9				4		1				
Iguique	Mar. 2	40,000		7						1				
Do	Mar. 9			4	2					1				
Kharput	Mar. 2	21,000								1			2	
Kobe	Mar. 10	418,646								2	1	1		
Konigsberg	Mar. 2	252,200	106	11									1	3
Do	Mar. 9		103	10									1	3
Leeds	Mar. 16	445,568	110	9								4		
Leipzig	Mar. 9	605,755	137	24								3		2
Do	Mar. 16		143	17								5		
Liverpool	do	752,055	274	23						2	3	4	7	7
London	do	7,340,125	1,719							2	2	21	23	25
Magdeburg	Feb. 24	285,557	106	7					1			3		
Do	Mar. 2		96	9							1	40		
Manaos	Mar. 9	52,000	53	7			5							
Do	Mar. 16		53	4			6							
Manchester	do	631,533	279	33							1	2	26	11
Mannheim	Mar. 2	200,285	42	5									2	
Prague	do	225,204	96	15						1	1		1	
Do	Mar. 9		94	27							1		2	
Rio de Janeiro	Feb. 3	921,987	373	73						7			2	4
Do	Feb. 10		417	73						2		2	3	12
Do	Feb. 17		384	65								1	5	4
Do	Feb. 24		347	55									7	2
Sarnia	Mar. 23	9,936	4	1						1				
Singapore	Feb. 10	303,328	203	26	3			1		5				
Smyrna	Feb. 17	400,000	50	9						3	2			
Do	Feb. 24		60	11							1			
Do	Mar. 2		82	13						2	2	1		
Talcahuano	Feb. 17	28,000		2									1	1
Do	Feb. 24												1	2
Tapachula	Jan. 7	25,000	34							1			1	1
Do	Jan. 15		42	1				2						2
Do	Jan. 23		2							1				4
Do	Jan. 31		38	1						1				1
Toronto	Mar. 16	372,000	134	7						1	3	3		
Trieste	Feb. 24	233,599	89									1		1
Do	Mar. 2		111							2			2	1
Do	Mar. 9		98									2	6	
Turin	Mar. 4	430,770	151	23									2	
Do	Mar. 10		153	16								1	4	
Do	Mar. 17		169	16								2	1	

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

AUSTRIA-HUNGARY—*Brünn.*—Month of January, 1912. Population, 108,944. Total number of deaths from all causes 280, including diphtheria 4, measles 7, scarlet fever 1, tuberculosis 49, typhoid fever 1.

BRAZIL—*Pernambuco.*—Two weeks ended February 15, 1912. Population, 225,000. Total number of deaths from all causes 434, including plague 1, smallpox 66, tuberculosis 55, typhoid fever 2, yellow fever 7.

FRANCE—*St. Etienne.*—Two weeks ended February 15, 1912. Population, 150,000. Total number of deaths from all causes 149, including diptheria 1, measles 1, scarlet fever 1, tuberculosis 22, typhoid fever 3.

GREAT BRITAIN.—Week ended March 9, 1912.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 14.4 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 23.1 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Waterford, viz, 7.6, and the highest at Dundalk, viz, 51.6 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 17.5 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Partick, viz, 4.6, and the highest at Perth, viz, 23.1 per 1,000. The total number of deaths from all causes was 731, including diphtheria 8, measles 39, scarlet fever 10, typhoid fever 3.

HAWAII—*Hilo.*—Month of February, 1912. Population, 3,500. Total number of deaths from all causes 7, including tuberculosis 5.

Honolulu.—Month of February, 1912. Population, 39,306. Total number of deaths from all causes 100, including diphtheria 1, tuberculosis 20, typhoid fever 1.

MALTA.—Two weeks ended March 2, 1912. Population, 213,395. Total number of deaths from all causes 168, including diphtheria 1, measles 7, tuberculosis 10, typhoid fever 2.

PANAMA—*Panama.*—Month of February, 1912. Population, 30,000. Total number of deaths from all causes not reported. The deaths include tuberculosis 12.

URUGUAY—*Montevideo.*—Month of December, 1911. Population, 321,224. Total number of deaths from all causes 571, including diphtheria 1, tuberculosis 68, typhoid fever 5.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

Google

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PUBLIC HEALTH REPORTS.

VOL. XXVII. APRIL 19, 1912. No. 16.

POLIOMYELITIS IN THE UNITED STATES, 1910 AND 1911.

Cases of poliomyelitis are required by State law or regulation to be reported to the health authorities in the following States and Territories: California, District of Columbia, Hawaii, Idaho, Iowa, Maine, Massachusetts, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Virginia, Washington, and Wisconsin.

Of the above States and Territories in which the disease is notifiable, no case was reported to the Surgeon General of the Public Health and Marine-Hospital Service during the year 1911 from Hawaii, Maine, New Jersey, Ohio, South Carolina, or Tennessee. It is known, however, that a considerable number of cases occurred in Cincinnati, Ohio.

The table on page 549 shows the prevalence of the disease during the calendar years 1910 and 1911, as given by State reports. This table has been compiled from special monthly reports made to the Surgeon General by the health departments of California, District of Columbia, Idaho, Illinois, Indiana, Iowa, Maryland, Massachusetts, Minnesota, New York, North Dakota, Oregon, Pennsylvania, Rhode Island, South Dakota, Virginia, Washington, and Wisconsin, and from the printed bulletins of these and other States.

The data is very incomplete. Only the cases were available in some instances and deaths only in others. Throughout the table it is evident that the deaths have been reported much more completely than the cases. The disease was undoubtedly also present in some States not appearing in the list. However, in spite of the unavoidable incompleteness of the information, the table shows the recorded geographic distribution and prevalence of the disease in the United States during the calendar years 1910 and 1911.

A similar table compiled from the same sources of information for the year 1910 appeared in the Public Health Reports for March 3, 1911, on page 242.

The States that made reports for each of the 12 months of the year 1911 and for which, therefore, the data should include all cases reported to the health department are as follows: District of Columbia, Indiana, Iowa, New York, Pennsylvania, Rhode Island, South Dakota, Virginia, Wisconsin, Oregon, Idaho, Washington.

The table, which, in addition to giving the cases and deaths reported for 1911, shows the totals for 1910 and also the deaths compiled by the Bureau of the Census from the registration States and cities for the same year, indicates that the disease has been present during the last two years in all sections of the country. Asst. Surg. Hasseltine, while cruising in Alaskan waters on the revenue cutter *Rush* during the summer of 1910 reported that poliomyelitis had been recognized in Alaska at Douglas, Chicagoff, and Yakutat.[1] It is probable that no State or Territory in the continental United States has been entirely free from the disease and that the absence of reported cases simply indicates a lack of official means for being informed of their occurrence or a failure on the part of physicians to recognize or report sporadic cases and limited mild outbreaks.

From the reports of cases and deaths it appears that during 1910 the greatest prevalence of the disease was in Iowa, Massachusetts, Minnesota, New York, and Pennsylvania, and that a considerable, although lesser, number of cases occurred in Connecticut, District of Columbia, Illinois, Indiana, Kansas, Michigan, New Jersey, Ohio, Rhode Island, Washington, and Wisconsin. The seeming greater prevalence in these States may, however, be due, to some extent at least, to an active interest on the part of the health authorities and the more general recognition of cases on the part of practicing physicians. In those States in which the disease is not notifiable its prevalence must remain largely unknown.

During 1911 the greatest number of cases appear to have occurred in Illinois, Indiana, Iowa, Massachusetts, Minnesota, New York, Pennsylvania, and Wisconsin. There seems, however, to have been a marked decrease in the prevalence of the disease from that of 1910.

For the purpose of arriving at the case-fatality rate only those States can be considered in which especial effort was made to trace all cases of the disease. In Massachusetts of 601 cases occurring during 1910, studied by Lovett and Sheppard, 54 ended fatally. This gives a case-fatality rate of 9 for each 100 cases. In Vermont among 72 cases studied by Caverly there were 10 deaths, giving a case-fatality rate of 13.9 per 100 cases. Of 506 cases in 1910 in the District of Columbia studied by a special committee of the medical association there were apparently only 16 deaths, giving a case-fatality rate of 3.1 per hundred cases.

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[1] Public Health Reports May 5, 1911, p. 633.

Poliomyelitis in the United States—Cases and deaths reported during the years 1910 and 1911.

States.	1911																										Total for 1910.		Deaths in 1910, compiled by the Bureau of the Census from the registration States and cities.
	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total for 1911.				
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
Alabama																									(*)				3
Alaska																											8		
California	2	1	3									1		2	2	1	2	1			4	1	12	4	25	11	33	9	29
Colorado																											5	1	4
Connecticut	3		1				1		1		1		3		8		16		7		2		1		44		168	32	40
Delaware																											2	1	3
District of Columbia									1	1			2						2		2	1			7	2	[1] 506	[1] 16	21
Florida									1																1		21		
Hawaii (Honolulu)																											42	1	
Idaho							2		2	1			1				5		1				2		13	1	96	6	
Illinois	5		8	2	7	3	6	4	8	4	8	1	14		46	15	39	5							141	34	137	42	24
Indiana		7		4		1		3		7		2	11	2	24	7	21	6	33	16	5	5	3	2	97	62	133	29	49
Iowa	10	7	3	4		1	5	3	1	2	2	1	3	1	9	4	10	2	14	5	10	2	1	2	68	34	638	161	
Kansas																											189	47	4
Kentucky																											(*)		1
Louisiana																											(*)		2
Maine																											(*)	27	31
Maryland	2	2		2		1		1	1	2				3				1			3	3	3	3	9	18	35	28	35
Massachusetts	11		2	2	11	1	5	1	8	3	12		26	2	82	4	47	5	31	5	19		6		260	23	[2] 845	[2] 54	122
Michigan	2	4	2	6	1	6						2	7				7		4						23	18	43	14	48
Minnesota	1	3	4	3	2	5	2	4	8	2	10	7	20	8	14	3	1	7	3	6		5	4	2	69	55	227	69	1 97
Mississippi																									(*)				
Missouri																											(*)		18
Montana																												6	17
Nebraska																											(*)		4
Nevada																											(*)		
New Hampshire																											5	2	19
New Jersey																											75		50
New York	7	7	5	2	6	6	5	3	1	1	8	1	16	3	34	10	28	8	16	1	10	3	2	3	138	48	217	60	170
New York City					3		3		3		3		21		27		58		89		67		73		347				
North Carolina																											(*)		3

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* Present.

[1] Report of a committee of the Medical Association of the District of Columbia, Washington Medical Annals, May, 1911.

[2] A report by Lovett and Sheppard (Boston Med. and Surg. Journ., May, 1911) states that there occurred in Massachusetts during 1910, at least 845 cases of poliomyelitis, and tha t of 601 cases 54 ended fatally.

Poliomyelitis in the United States—Cases and deaths reported during the years 1910 and 1911—Continued.

States.	1911																										Total for 1910.		Deaths in 1910 (compiled by the Bureau of the Census from the registration States and cities.
	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total for 1911.				
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
North Dakota									1		2		3				5	1							11	1	100	5	
Ohio																									(*)		52		76
Oklahoma																											12	12	
Oregon	2	1	1	1	1	6		2		2			1						1		2	1			8	13	66	24	19
Pennsylvania	11		15		17		10		4	1	9	8	15	6	20	10	30	9	22		10	4	14	6	177	44	1,097	188	269
Rhode Island	1				1				3		1	1	2	2	4	1							1	1	13	5	231		44
South Carolina																											85	10	1
South Dakota	2				2	1	5	3	1		1		3	1	6	1	5	2	1						26	8	86	17	
Tennessee																													1
Utah																			1						1		2	1	7
Vermont					1		1		2		3		4		6		3		3		2		2		27	8	[1] 72	[1] 10	9
Virginia	2	3	5	10			25		16		38		72		41		42		41		30		20		332	13	357	2	15
Washington	2	2	3	4	5	1	3	2	2	1	12		2	2	1	1	4	1	2	2	2				38	16	254	49	81
Wisconsin	1	2			1	2			2	3	4	2	5	1	9	2	11	5	11	4	11	2	1	3	56	26	22	27	43
Total	64	39	52	40	58	34	73	26	66	30	114	26	231	33	333	59	334	53	282	39	179	27	145	26	1,931	440	5,861	950	1,459

* Present.

[1] Caverly, C. S., Bull. Vt. State Board of Health, Dec. 1, 1911, and Mar. 1, 1912

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BROOKLINE, MASS.

PRIVIES AND CESSPOOLS.

ARTICLE VII.—*Vaults and cesspools.*

SECTION 1. No privy vault or cesspool shall hereafter be constructed in the town of Brookline without a permit therefor from the board of health. This shall not prohibit the construction of temporary privy vaults serving new buildings; but upon the installation of the necessary piping connecting such buildings with the sewer, any such privy vault shall be abolished and a tank-fed water-closet substituted therefor. The owner, contractor, or agent shall cause the contents of every such privy vault to be covered with lime, fresh earth, or ashes twice each day. All privy vaults, cesspools, and manure pits shall be flyproof.

SEC. 2. No privy vault or cesspool shall hereafter be constructed or maintained on any lot or premises where a sewer is accessible. All privy vaults and cesspools shall be located as directed by the sanitary agent, and no cesspool shall hereafter be constructed within 5 feet of any party line or fence, within 15 feet of the line of any street or within 20 feet of the door or window of any building used for habitation, except by special permission of the board of health. No cover shall be placed upon or over any cesspool or privy vault until the same shall have been inspected by the board of health or its agents. The minimum interior dimensions permitted for cesspools hereafter constructed in this town shall be 6 feet deep and 6 feet in diameter.

SEC. 3. No rain-water leader, soil, waste, or drain pipe shall discharge into or be connected with any privy vault, nor shall a privy vault, cesspool, or manure pit be directly or indirectly connected with any sewer. No drainage from any stable or other building shall discharge into a manure pit. Every manure pit shall be kept dry and shall be made water-tight.

SEC. 4. No vault or cesspool shall be emptied by any other than the odorless process, nor by carts not of the Odorless Excavating Co., except permission be first obtained from the board of health. It is further ordered that neither night soil nor the contents of cesspools shall be dumped within the limits of the town.

[Ordinance, board of health, adopted Nov. 6, 1911.]

CUMBERLAND, MD.

NUISANCES—ABATEMENT OF.

Be it ordered by the mayor and city council of Cumberland, That the health officer of the city of Cumberland, after due notice to the owner, to be served personally or upon the occupant of the premises or by posting upon the property, shall have the power to abate any nuisance which he may find existing upon such property and to employ any person or persons as may be necessary to carry into effect the provisions of this order.

[Ordinance No. 2509, adopted Aug. 7, 1911.]

FREEPORT, ILL.

BAKERIES, RESTAURANTS, KITCHENS, CANDY KITCHENS, HOTEL KITCHENS—LOCATION, CONSTRUCTION, MAINTENANCE.

SECTION 1. For the purpose of this ordinance the words defined in this section shall be held and construed to have the meaning herein set forth. The word "bakery" shall be construed to mean any place used for producing, mixing, compounding, or baking, for sale or use in any restaurant, bakeshop, hotel, or other place, any bread, cakes, pies, biscuits, crackers, rolls, macaroni, or other food products of which flour or meal is the principal ingredient.

The word "restaurant" or "kitchen" shall be construed to mean any place where, for pay, persons are served with food or furnished with table board, or where food is cooked or prepared for serving to the public as food, excepting, however, private homes in which table board is served or public boarding houses. The word "confectionery" shall be construed to mean any place where candies, confections, or sweetmeats are sold or offered for sale. The words "candy kitchen" shall be construed to mean any place where candy, confectionery, or sweetmeats are manufactured, prepared, or concocted for public consumption. The word "basement" shall be construed to mean a lower story of any building which is less than one-half of its height below the grade of the street or streets on which it faces, or of the general level of the ground. The word "cellar" shall be construed to mean a lower story of a building which is more than one-half its height below the grade of the street or streets on which it faces.

The word "person," as used in this ordinance, shall be construed to include and mean the words person, firm, society, association, copartnership, corporation, or individual. The singular shall include the plural, and the masculine, the feminine.

Sec. 2. It shall be unlawful for any person to maintain and operate any bakery, restaurant, kitchen, candy kitchen, confectionery, or any other place where food products are manufactured, produced, concocted, prepared, sold, or offered for sale for public consumption, except in compliance with this ordinance or other ordinance of the city of Freeport.

Sec. 3. Any person desiring to maintain and operate a bakery, kitchen, candy kitchen, restaurant, or confectionery in the city of Freeport shall first make written application therefor to the health officer of said city, setting forth the name of such persons, and the location thereof, by street and number. The health officer shall thereupon cause such place, with all the fixtures and appliances connected therewith or to be used therein, to be carefully inspected, and if said applicant shall have fully complied with the provisions of this ordinance the said health officer shall issue a written or printed permit to such applicant in accordance therewith.

Sec. 4. All permits issued pursuant to this ordinance shall expire on the 1st day of April of the year in which they are issued. No permit shall be transferable. All permits must be conspicuously posted in a public place upon the premises for which such permit was granted.

Sec. 5. It shall be unlawful to maintain or operate any bakery, restaurant, kitchen, candy kitchen, or confectionery in any basement, unless said basement shall have sufficient light and ventilation furnished from windows communicating directly with the outside air, or such artificial system or systems of light or ventilation as may be approved by the health officer.

It shall be unlawful to maintain or operate any restaurant or kitchen, or any part thereof, in any basement or cellar the floor or which is more than 12 feet below the existing surface grade of the street or alley in which such basement or cellar faces.

Whenever any basement or cellar, or portion thereof, used for any purpose in this ordinance provided for, shall not be supplied with a sufficient natural light or ventilation, or both, as herein required, the health officer shall require the person maintaining or operating the same, within not more than 30 days, to install such artificial system of light or ventilation, or both, therein as shall comply with the provisions of this ordinance. If such person shall fail, neglect, or refuse to comply with such notice within the time herein specified, the health officer shall forthwith close said premises until such order be fully complied with.

Sec. 6. It shall be unlawful for any person maintaining or operating any bakery, restaurant, kitchen, candy kitchen, or confectionery to permit any disagreeable or obnoxious odors to escape therefrom, so as to be in any way obnoxious to any person. Whenever such premises shall be constructed, operated, or maintained in such manner that any such disagreeable or obnoxious odors shall escape therefrom, the health officer shall issue a notice to the person maintaining or operating said premises, requiring him within not more than 30 days from and after the date of said notice to construct a duct of sufficient size to carry all odors, gases, or fumes above the roof of any contiguous or adjacent building, and, if necessary, a proper fan or ventilating mechanism, satisfactory to the health officer, to be connected with such duct to accelerate the removal of such odors, gases, or fumes. If such person shall fail, neglect, or refuse to comply with such notice within the time herein specified, the health officer shall forthwith close said premises until such order be fully complied with.

Sec. 7. Every building occupied and used as a bakery, restaurant, kitchen, candy kitchen, or confectionery shall be well drained and all plumbing therein shall be constructed in accordance with ordinances or rules and regulations governing plumbers and plumbing in the city of Freeport; and the rooms thereof used for the manufacture, preparation, or sale of any food products herein provided for shall be light, dry, and airy, and shall be used exclusively for such purpose, and shall have tight floors and walls and shall, at all times, be kept free from moisture and in a state of good repair. Said floors shall have a smooth surface and be impervious to water, and may be constructed of wood, cement, or tile laid in cement: *Provided, however*, That no wood floor shall be constructed in any room used for the manufacture of any food products where the floor of said room is below the level of the street, sidewalk, or adjacent grounds.

The walls and ceilings of such rooms used for the manufacture of any food products shall be properly whitewashed or painted at least once every year or oftener, when required by the health officer; the floor, utensils, and furniture of said rooms as are used for the manufacture, storing, or sale of said products shall at all times be kept in a clean and sanitary condition. The furniture and utensils of such rooms shall also be arranged so that the same can be easily and perfectly cleaned.

Sec. 8. It shall be unlawful for any bakery, restaurant, kitchen, candy kitchen, or confectionery to be used as a sleeping place. It shall be unlawful for any water-closet or ash pit to be within or directly communicated with the bake room or any other room used to manufacture any food products. It shall be unlawful for any workman, while engaged in the manufacture of any food products, to fail to wear caps, slippers, or shoes, and an external suit of white cotton or similar fabric used for that purpose only, and these garments shall at all times be kept clean.

Sec. 9. It shall be unlawful for any person to fail to maintain or operate any bakery or kitchen not provided with ample toilet facilities to enable the employees therein to keep their persons clean, and not provided with separate dressing rooms to enable the employees to change their clothing and keep the same in proper condition, and not provided with separate toilet facilities for male and female employees therein.

Sec. 10. It shall be unlawful for any person afflicted with any contagious or infectious disease, such as typhoid, diphtheria, smallpox, or membranous croup, scarlet fever, measles, German measles, whooping cough, mumps, chicken pox, cerebrospinal meningitis, tuberculosis, or any venereal disease in a contagious state, or who shall suspect that he has any of the above-mentioned diseases, or who has any rash or skin trouble, or in which place of residence any contagious or infectious disease exists, to work or be employed in or for any person, to employ such person in or about any place where any food products are manufactured or prepared for food, or is sold or offered for sale, during the time said disease exists, or thereafter until the health officer shall issue a certificate that there is no danger from employment of said person in such establishment. It shall be unlawful for any person to work or be employed in any bakery, kitchen, candy kitchen, or confectionery unless he shall furnish and place on file, within 48 hours from date of employment, with the person in charge of such establishment a certificate from the health officer of the city of Freeport, certifying that such person has been examined by the health officer or his duly authorized agent, and that there is no danger from the employment of such person, such certificate to be issued and such examination to be made by the health officer without charge to the applicant for such examination and certificate. Such certificate shall be at all times kept on file in the office of the employer of such person and open for inspection at all reasonable hours by the health officer or his duly authorized assistants, and if at any time any infectious or contagious disease, rash, or skin trouble shall appear, the health officer shall have the authority to at once exclude such person from the establishment where employed, and it shall be unlawful for any person so excluded to return to work or for the employer to allow such person so affected to work in his establishment, so long as said person is affected with any contagious or infectious disease, rash, or skin trouble. It shall be the duty of each employee in any bakery, restaurant, candy kitchen, or confectionery to furnish to his employer, or person in charge of the above-named establishments, such certificate of health annually.

Sec. 11. It shall be unlawful for any person to expectorate within any place where food of any character is prepared for human use, except in special receptacles maintained for the purpose. Such receptacles shall be made of some material impervious to water, and shall be cleaned at least once in every 24 hours. A sufficient number of such receptacles shall be provided in every place where food is prepared. It shall be unlawful for any person to commit a nuisance of any character within any place where food for human use is prepared.

Sec. 12. Notice forbidding all persons to use tobacco or to spit upon the floor or side walls shall be posted in every bakeshop or kitchen.

Sec. 13. It shall be the duty of every occupant, whether owner or lessee, of every room or building used for the manufacturing of food products, to carry out the provisions of this ordinance and to make all changes and additions necessary therefor.

Sec. 14. It shall be the duty of the health officer or his duly authorized assistants to inspect such places, fixtures, appliances, and material from time to time during the term the permit as aforesaid shall be in force. The health officer shall be charged with the general supervision, control, and regulation of all bakeries, restaurants, kitchens, candy kitchens, and confectioneries, and all other places where food products are manufactured, prepared, concocted, or assembled for public consumption, and with the enforcement of the provisions of this ordinance.

Sec. 15. It shall be unlawful for any person to maintain or operate any place or premises for the sale of food products, except the same be kept in clean and sanitary condition, subject to the approval of the health officer, and no such food products shall be kept or exposed for sale in the open air, but all bread or candy, or other such food products offered for sale, shall be kept in glass jars, or protected from dust and dirt in such manner as shall be approved by the health officer.

Sec. 16. Any person convicted of violating any of the provisions of this ordinance shall be fined not less than one dollar ($1.00) nor more than one hundred dollars ($100.00).

[Ordinance adopted Feb. 5, 1912.]

HOTELS, RESTAURANTS, AND BOARDING HOUSES—LICENSING OF.

Section 1. Any person, firm, or corporation desiring to conduct or operate as a hotel, restaurant, café, boarding house, inn, tavern, or public eating house or place, any building or any part of any building or any place in the city of Freeport, shall file with the city clerk of said city a written application for such license, giving in such application the full name and address of the proprietor of the proposed hotel, restaurant, café, boarding house, inn, tavern, or public eating house or place, the name of the owner of the premises and the location of the building or buildings or portion thereof or place intended to be used as a hotel, restaurant, café, boarding house, inn, tavern, or public eating house or place in said city. Upon the filing of any such application for a license, the health officer of said city shall examine or cause to be examined the sanitary conditions of the place proposed to be licensed and shall present such application to the city council, together with a statement of the sanitary conditions of the place proposed to be licensed, with his approval or disapproval of the same. Said health officer shall keep a permanent record of such inspection. Such license shall be issued to the applicant by the city clerk when authorized and directed by the city council so to do, upon the presentation by the applicant to the city clerk of a receipt from the city treasurer showing payment into the city treasury of the license fee required for such license. The license fee for such license is hereby fixed and established at $3 per annum for each hotel, restaurant, café, boarding house, inn, tavern, or public eating house or place in the city of Freeport. All licenses issued under this ordinance shall be in force for one year after the issuance of same, unless sooner revoked. Each licensee under this ordinance shall keep his license conspicuously posted in the place of business specified in his license.

Sec. 2. Any person, firm, or corporation conducting or operating any hotel, restaurant, café, boarding house, inn, tavern, or public eating house or place within said city without having a license as aforesaid or in violation of any of the terms of this ordinance shall be subject to a fine of not less than $5 nor more than $50 for each offense, and each 24 hours that such violation continues shall constitute a separate offense hereunder.

[Ordinance adopted Feb. 5, 1912.]

HOLLAND, MICH.

PREMISES—SANITARY MAINTENANCE OF.

Rule 26. It shall be the duty of the owner or owners of any building, lot, or premises within the city of Holland, whether occupied by himself or by a tenant, to keep or cause such building, lot, or premises to be kept in a sanitary and healthful condition and in accordance with these regulations.

Rule 27. If any building, lot, or premises within the city is not kept in a sanitary and healthful condition and in accordance with these regulations, the health officer, or city inspector, or any policeman or constable of the city, upon the order of the board of health, shall serve a notice upon the owner, agent, or occupant of said premises requiring said premises to be put into a sanitary and healthful condition and in accordance with these regulations within a reasonable time, to be stated in said notice. If said owner, or agent, or occupant shall fail to comply with the requirements of said notice within said time, it shall be the duty of the city inspector to cause said work to be done and the expense thereof will be charged to such owner or assessed upon the premises.

RULE 28. No person shall remove or deface any card or sign from any building or premises, or from any can, package, or article which may have been placed there by order of the board of health or the health officer.

[Regulations, board of health, adopted Oct. 2, 1911.]

ORANGE, N. J.

MARRIAGES AND BIRTHS—CERTIFICATES OF, TO BE MADE.

Section 82 of the ordinance to which this ordinance is a supplement is hereby amended to read as follows:

"82. The secretary of the board of health for the time being shall be ex officio registrar of vital statistics for the city of Orange, and such secretary is hereby designated, appointed, and constituted registrar of vital statistics as aforesaid and shall have all the powers and perform all the duties required of a registrar of vital statistics by the laws of this State or the ordinances of this board and such as have heretofore been vested in and imposed upon the city clerk of the city of Orange; and every person having authority to solemnize marriages shall transmit to such registrar of vital statistics a certificate of every marriage solemnized before him within five days next thereafter, and said certificate shall be made out on blank forms furnished by said registrar for that purpose, and shall include all facts required by said forms. Any person or persons failing to comply with or violating any of the provisions of this section shall forfeit and pay a penalty of $10."

Section 83 of the ordinance to which this ordinance is a supplement is hereby amended to read as follows:

"83. That the physician or midwife present at the birth of every child born in this city, and in case there is no physician or midwife present, the parent or witness present at said birth, shall report in writing to the registrar of vital statistics of this city all particulars concerning said birth called for on the blank forms furnished by him for that purpose, and said report shall be made within five days next after the date of said birth. Any person or persons failing to comply with, violating, or offending against any of the provisions of this section shall forfeit and pay a penalty of $10."

[Ordinance, board of health, adopted Oct. 2, 1911, as a supplement to the sanitary and plumbing code adopted Dec. 1, 1900.]

WILMINGTON, N. C.

STABLES FOR HORSES—CONSTRUCTION, MAINTENANCE, AND CARE OF MANURE.

SECTION 1. That on and after the 15th day of July, 1911, it shall be unlawful for any person, firm, or corporation to have, keep, or maintain any horse stable in the corporate limits of the city, except that the same shall be provided with a water-tight wood, brick, or cement floor properly drained, which shall be cleaned daily. Each stable shall be provided with a fly-proof covered bin, tongue and groove flooring, or other solid material to be used for both bin and cover, in which the manure and litter shall be placed daily. Said bin to be emptied and contents removed from city limits twice each month.

SEC. 2. Any person, firm, or corporation violating section 1 of this ordinance, shall be fined $5 for each and every offense.

[Ordinance effective Dec. 7, 1911.]

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAR. 30, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md		1	Milwaukee, Wis	4	5
Bridgeport, Conn	1		Norristown, Pa	1	
Cincinnati, Ohio	5	1	Nashville, Tenn	4	2
Columbus, Ohio		1	New Bedford, Mass	3	2
Denver, Colo	1	1	New Orleans, La	1	
El Paso, Tex	4		New York, N. Y	15	5
Fort Wayne, Ind	1		Oakland, Cal		2
Hartford, Conn		1	Omaha, Nebr		1
Haverhill, Mass	2		Saginaw, Mich	17	
Jacksonville, Fla	1	1	St. Louis, Mo	2	3
Kansas City, Kans	21		San Antonio, Tex	12	6
Kansas City, Mo	17	15	San Francisco, Cal		1
Lexington, Ky	1		Seattle, Wash	1	

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAR. 30, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md		2	Milwaukee, Wis	5	
Binghamton, N. Y	1		Newark, N. J		1
Boston, Mass		2	New Orleans, La		2
Cincinnati, Ohio	5		New York, N. Y	37	10
Cleveland, Ohio	5	1	Philadelphia, Pa	12	3
Denver, Colo	2		Plainfield, N. J	25	
Jacksonville, Fla	1		Reading, Pa	1	
Kalamazoo, Mich	3		St. Louis, Mo	14	
Kansas City, Mo	3		San Francisco, Cal	1	
Kearny, N. J	1		South Bethlehem, Pa	2	
Lancaster, Pa	1		West Hoboken, N. J	1	
Lebanon, Pa	1		Wheeling, W. Va	1	
Los Angeles, Cal	5		Wilkes-Barre, Pa	1	

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 1,015 acres of land in Alameda County were covered with poison during the week ended March 30, 1912.

During the same period 3,740 acres of land in San Joaquin County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	5 squirrels.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Total collected.	Found dead.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Mar. 30, 1912	[1] 156	1	104	
Oakland	do	[2] 799	20	629	
San Francisco	do	[3] 1,704	2	1,250	
Washington:					
City—					
Seattle	do	1,084		1,016	

[1] **Identified:** Mus norvegicus 105, Mus musculus 51.
[2] **Identified:** Mus norvegicus 647, Mus musculus 150, Mus rattus 2.
[3] **Identified:** Mus norvegicus 774, Mus rattus 245, Mus musculus 447, Mus alexandrinus 238.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended March 30, 1912, 374 ground squirrels from Alameda County were examined for plague infection. No plague-infected squirrel was found.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAR. 30, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Altoona, Pa		4	Marinette, Wis		1
Auburn, N. Y	2	1	Marlboro, Mass		1
Aurora, Ill		6	Medford, Mass		2
Baltimore, Md		27	Moline, Ill		1
Beaver Falls, Pa	1		Montclair, N. J		5
Bennington, Vt	2	1	Montgomery, Ala		2
Binghamton, N. Y		1	Newark, N. J		10
Boston, Mass		48	New Bedford, Mass		7
Braddock, Pa	2	3	New Castle, Pa	1	
Bridgeport, Conn		3	New Orleans, La		4
Cambridge, Mass		4	Newton, Mass		1
Chelsea, Mass		3	New York, N. Y		151
Chicopee, Mass		1	Norristown, Pa	4	2
Cincinnati, Ohio		18	North Adams, Mass		1
Cleveland, Ohio	30	26	Oakland, Cal		3
Clinton, Mass		1	Omaha, Nebr		10
Cumberland, Md		1	Passaic, N. J		2
Danville, Ill		5	Pawtucket, R. I		3
Dayton, Ohio		3	Philadelphia, Pa	32	47
Denver, Colo		12	Pittsfield, Mass		1
Duluth, Minn	2	2	Plainfield, N. J		1
East Orange, N. J		1	Pottstown, Pa		1
El Paso, Tex	6	6	Providence, R. I		5
Evansville, Ind		5	Reading, Pa	5	1
Everett, Mass		2	Richmond, Va		12
Fall River, Mass		5	Roanoke, Va		2
Fort Wayne, Ind		5	Saginaw, Mich		1
Grand Rapids, Mich	5		San Antonio, Tex		4
Harrisburg, Pa	3		San Francisco, Cal	5	
Hartford, Conn		6	Schenectady, N. Y	5	3
Kalamazoo, Mich	2	2	Seattle, Wash		1
Kansas City, Mo	25	10	South Bend, Ind		1
Knoxville, Tenn		2	South Bethlehem, Pa	3	2
La Crosse, Wis		2	South Omaha, Nebr	3	3
Lancaster, Pa	5		Springfield, Mass		5
Lawrence, Mass		5	Superior, Wis		1
Lebanon, Pa	2		Taunton, Mass		1
Lexington, Ky		1	Toledo, Ohio		[illegible]
Lima, Ohio		2	Waltham, Mass	2	
Logansport, Ind		2	Wheeling, W. Va		5
Los Angeles, Cal	2	10	Wilkes-Barre, Pa	1	1
Lowell, Mass		4	Wilkinsburg, Pa	1	2
Lynchburg, Va		2	Wilmington, Del		4
Lynn, Mass		3	Wilmington, N. C	3	2
Malden, Mass		3	Yonkers, N. Y		1
Manchester, N. H	5	5	Zanesville, Ohio		2

POLIOMYELITIS.

During the week ended March 30, 1912, poliomyelitis was reported by city health authorities, as follows: Boston, Mass., 2 cases; Los Angeles, Cal., 1 death; Nashville, Tenn., 2 deaths; New York, N. Y., 5 cases, 1 death.

TETANUS.

During the week ended March 30, 1912, 1 case of tetanus with 1 death was reported in Philadelphia, Pa., and in Cumberland, Md., 2 deaths were reported.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED APR. 12, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Connecticut:				
Counties—				
New Haven	Mar. 1-31	41		
Toland	do	1		
Windham	do	26		
Total for State		68		
Florida:				
Counties—				
Alachua	Mar. 17-23	3		
Duval	Mar. 17-30	13		
Escambia	Mar. 17-23	3		
Hillsboro	do	4		
Putnam	Mar. 17-30	14		
Total for State		37		
Iowa:				
Counties—				
Appanoose	Mar. 1-31	25		
Audubon	do	1		
Blackhawk	do	1		
Carroll	do	8		
Harrison	do	2		
Humboldt	do	1		
Lee	do	1		
Linn	do	1		
Muscatine	do	1		
Pottawattamie	do	4		
Poweshiek	do	1		
Sac	do	1		
Woodbury	do	2		
Total for State		49		
*Louisiana:				
New Orleans	Apr. 1-6	19		
Mississippi:				
Counties—				
Attala	Mar. 1-31	50		
Chickasaw	do	1		
Clarke	do	5		
George	do	10		
Greene	do	11		
Harrison	do	38		
Jackson	do	1		
Jefferson Davis	do	6		
Lamar	do	5		
Lauderdale	do	58	1	
Newton	do	6		
Panola	do	1		
Pike	do	5		
Pontotoc	do	1		
Union	do	3		
Wayne	do	10		
Winston	do	20		
Yalobusha	do	10	1	
Total for State		241	2	
*Nebraska:				
Omaha	Apr. 1-6	1		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended Apr. 13, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
North Dakota:				
Counties—				
Benson	Mar. 1-31	6		
Cass	do	13		
Grand Forks	do	1		
Lamoure	do	4		
McHenry	do	10		
Stutsman	do	2		
Total for State		36		
Ohio:				
Counties—				
Athens	Mar. 1-31	32		
Clark	do	1		
Columbiana	do	1		
Crawford	do	6		
Cuyahoga	do	1		
Defiance	do	1		
Green	do	3		
Hamilton	do	5		
Hocking	do	1		
Huron	do	1		
Lucas	do	1		
Madison	do	14		
Montgomery	do	18		
Portage	do	1		
Tuscarawas	do	1	1	
Total for State		87	1	
***Tennessee:**				
County—				
Shelby	Mar. 1-31	4		
Vermont:				
Counties—				
Caledonia	do	8		
Franklin	do	5		
Lamoille	do	8		
Washington	do	2		
Total for State		23		
Virginia:				
Counties—				
Dickenson	Mar. 1-31	3		
Henrico	do	7		
Mecklenburg	do	5		
Nansemond	do	7		
Norfolk	do	44		
Roanoke	do	1		
Russell	do	9		
Scott	do	5		
Southampton	do	7		
Total for State		88		
Wisconsin:				
Counties—				
Buffalo	Mar. 1-31	1		
Clark	do	2		
Columbia	do	1		
Douglas	do	4		
Dunn	do	9		
Green Lake	do	7		
Jackson	do	3		
Monroe	do	7		
Portage	do	4		
Rock	do	1		
Trempealeau	do	2		
Waupaca	do	7		
Wood	do	1		
Total for State		43		
Grand total for the United States		696	3	

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAR. 30, 1912.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	225	18	....	8	....	26	1	....	....	46	29	4	4
Boston, Mass	670,585	287	29	4	175	....	26	....	....	....	72	23	7	....
Cleveland, Ohio	560,663	189	16	....	59	....	40	2	....	....	34	17	3	....
New York, N. Y	4,766,883	1,617	292	25	1,921	20	512	23	....	....	553	219	21	7
Philadelphia, Pa	1,549,008	487	46	8	35	....	65	1	....	....	75	63	16	4
St. Louis, Mo	687,029	238	19	5	44	....	25	2	4	....	46	23	2	....
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	107	2	....	35	....	18	1	....	....	15	4	2	....
Cincinnati, Ohio	364,463	130	4	1	15	....	27	2	1	....	37	22	6	....
Detroit, Mich	465,766	169	16	....	....	....	32	....	3	....	....	....	....	....
Los Angeles, Cal	319,198	119	12	1	3	....	11	....	3	....	21	20	2	....
Milwaukee, Wis	373,857	116	11	3	110	5	32	2	....	....	14	6	8	3
Newark, N. J	347,469	....	25	1	....	1	14	1	....	....	25	16	4	....
New Orleans, La	339,075	114	9	....	4	....	4	1	14	....	25	25	4	....
San Francisco, Cal	416,912	150	2	....	135	1	1	....	....	....	....	16	4	....
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	73	5	....	2	....	6	1	1	....	....	17	....	....
Jersey City, N. J	267,779	....	....	1	....	2	....	1	....	....	....	8	....	....
Kansas City, Mo	248,381	43	4	....	4	....	13	1	....	....	4	7	....	....
Providence, R. I	224,326	85	7	2	27	6	20	1	....	....	12	12	3	....
Seattle, Wash	237,194	50	....	....	11	....	3	....	3	....	8	11	7	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	32	....	....	1	....	....	3	....	....	3	3	....	....
Cambridge, Mass	104,839	26	12	....	43	....	2	....	....	....	4	2	1	....
Columbus, Ohio	181,548	63	10	....	36	1	9	....	....	....	2	5	2	....
Dayton, Ohio	116,577	34	1	1	22	....	2	....	38	....	1	9	....	1
Fall River, Mass	119,295	....	5	....	1	....	3	1	....	....	13	4	1	....
Grand Rapids, Mich	112,571	37	1	....	1	....	4	....	....	....	1	5	10	1
Lowell, Mass	106,294	45	1	....	23	1	6	1	....	....	4	7	....	....
Nashville, Tenn	110,364	60	2	....	2	....	4	....	....	....	6	6	2	....
Oakland, Cal	150,174	41	4	1	6	....	3	....	2	....	6	2	....	....
Omaha, Nebr	124,096	41	2	....	1	....	1	....	....	....	....	3	....	....
Richmond, Va	127,628	59	3	....	9	....	1	....	1	....	10	6	....	....
Spokane, Wash	104,402	....	1	....	116	1	4	....	11	....	....	5	....	....
Toledo, Ohio	168,497	69	4	....	31	1	5	....	....	....	....	5	4	1
Worcester, Mass	145,986	62	8	2	11	....	7	....	....	....	9	5	2	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	18	9	....	....	....	2	....	....	....	....	....	....	....
Bayonne, N. J	55,545	24	1	....	7	....	7	1	....	....	....	1	....	....
Brockton, Mass	56,878	24	2	....	63	1	2	....	....	....	3	3	....	....
Camden, N. J	94,538	....	2	....	....	....	7	....	....	....	24	....	....	....
Duluth, Minn	78,466	18	....	....	....	....	5	....	....	....	....	2	1	1
Elizabeth, N. J	73,409	21	1	....	1	1	5	....	....	....	4	2	....	....
Evansville, Ind	69,647	18	2	....	1	....	....	....	....	....	....	3	4	....
Fort Wayne, Ind	63,933	27	6	1	5	....	1	....	....	1	....	....	....	....
Harrisburg, Pa	64,186	21	2	....	101	....	2	....	2	....	6	....	....	....
Hartford, Conn	98,915	53	4	1	9	....	9	2	....	....	1	3	....	....
Hoboken, N. J	70,324	....	2	....	1	....	2	....	....	....	12	....	....	....
Jacksonville, Fla	57,699	....	1	....	11	....	....	....	5	....	....	1	....	....
Johnstown, Pa	55,482	19	2	1	1	....	1	....	....	....	1	2	....	....
Kansas City, Kans	82,331	....	....	....	1	....	....	....	1	....	25	....	4	....
Lawrence, Mass	85,892	39	2	....	1	....	1	....	....	....	1	7	1	....
Lynn, Mass	89,336	29	3	....	8	....	10	....	....	....	6	2	....	....
Manchester, N. H	70,063	20	1	....	8	....	....	....	....	....	....	....	....	....
New Bedford, Mass	96,652	33	1	....	35	....	6	....	....	....	1	1	1	....
Oklahoma City, Okla	64,205	14	....	....	....	....	....	....	....	....	....	4	....	....
Passaic, N. J	54,773	14	2	....	22	....	2	....	....	....	1	....	....	....
Pawtucket, R. I	51,622	4	....	....	....	....	....	....	....	....	....	1	....	....
Reading, Pa	96,071	27	4	....	1	....	3	....	....	....	7	1	....	....
Saginaw, Mich	50,510	6	8	....	....	....	2	....	....	....	4	3	2	2
San Antonio, Tex	96,614	56	1	....	9	....	1	....	3	....	....	6	1	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Mar. 30, 1912—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Schenectady, N. Y	72,826	19			37		1				1	1		
South Bend, Ind	53,684	13	2	1			4		2				2	
Springfield, Ill	51,678	16	1				2					2	2	1
Springfield, Mass	88,926	35	3	1	19		5				3	2		
Trenton, N. J	96,815	43	1				2	2			10	4		
Wilkes-Barre, Pa	67,105	20	1	1	2		2				2			
Wilmington, Del	87,411	30		1								3		1
Yonkers, N. Y	79,803	20	6		4		14				5	1		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	11	1				1							
Auburn, N. Y	34,668	6	2				2				1	1		
Aurora, Ill	29,807	15	1				1					2		
Berkeley, Cal	40,434	7			16				1			2	1	
Binghamton, N. Y	48,443	20			10		3	2			2	4		
Brookline, Mass	27,792	5	1		4						1			
Chattanooga, Tenn	44,604						1		1					
Chelsea, Mass	32,452	19			9						2	1		
Chicopee, Mass	25,401	8	1		2		2							
Danville, Ill	27,871	13										3		
East Orange, N. J	34,371	7			3		1				1			
Elmira, N. Y	37,176	10			5							1		
El Paso, Tex	39,279	41	2				2		1	1		5		
Everett, Mass	33,484	8	2		2									
Fitchburg, Mass	37,826	12	1		1						1	2		
Haverhill, Mass	44,115	17	2		4		2				2			
Kalamazoo, Mich	39,437	15	2				9		3		2			
Knoxville, Tenn	36,346	10			12							2		
La Crosse, Wis	30,417	7	2	1			1							
Lancaster, Pa	47,227		1		125						1			
Lexington, Ky	35,099	13			3						5	1		
Lima, Ohio	30,508	10										2		
Lynchburg, Va	29,494	12			58		5				3	4		
Malden, Mass	44,404	10			5						2			
Montgomery, Ala	88,136	19			8						1	2		
Newcastle, Pa	36,280		1										1	
Newport, Ky	30,309	10					9				2	2		
Newton, Mass	39,806	14			35		1				1	1		
Niagara Falls, N. Y	30,445	7	2								1		3	1
Norristown, Pa	27,875	12	1	1	22						3		2	
Orange, N. J	29,630	11			5		4					1		
Pasadena, Cal	30,291	16			1							3		
Pittsfield, Mass	32,121	9			2		1				2			
Portsmouth, Va	33,190	13	3		1				1					
Racine, Wis	38,002	9	3	1			4							
Roanoke, Va	34,874	10			20						10	2		
Salem, Mass	43,697	11	1		1		2							
San Diego, Cal	39,578	3			13		1		1		1	1	2	1
South Omaha, Nebr	26,259	12												
Superior, Wis	40,384	11	2									1		
Taunton, Mass	34,259	23	1		2		1				3			
Waltham, Mass	27,834				44						1			
West Hoboken, N. J	35,403	12	1	1	3		1				1	3		
Wheeling, W. Va	41,641	13	1	1	1		1						4	
Williamsport, Pa	31,860	14			4		1							
Wilmington, N. C	25,748	10			24		1		4			1	1	
York, Pa	44,750		1				2				2			
Zanesville, Ohio	28,026	8											2	
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	10	1		3							1		
Ann Arbor, Mich	14,817	5	1		1		2							
Beaver Falls, Pa	12,191		1				1							
Bennington, Vt		2												
Braddock, Pa	17,759	6	2		1									
Cambridge, Ohio	11,327	4			1							1		
Camden, S. C		2												
Carbondale, Pa	17,040	9			6		2							

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Mar. 30, 1912—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants—Continued.														
Clinton, Mass	13,075	4										1		
Coffeyville, Kans	12,687		1								3	1		
Columbus, Ga	20,554	11												
Columbus, Ind		1							7					
Concord, N. H	21,497	8			13									
Cumberland, Md	21,839	12	2		19						2		1	
Dunkirk, N. Y			4											
Galesburg, Ill	20,089	3									1	1		
Harrison, N. J	14,498	4					1				1			
Homestead, Pa	18,710	8	2	1									1	
Kearny, N. J	18,659	6	2		25		4							
La Fayette, Ind	20,081	6			1							1		
Lebanon, Pa	19,240						1						1	
Logansport, Ind	19,050	9			1		3					1	17	2
Marinette, Wis	14,610	4												1
Marlboro, Mass	14,577	3										1		
Massilon, Ohio		2												
Medford, Mass	23,156	9	3		23		3							
Melrose, Mass	15,715	4			8						1	1	1	
Moline, Ill	24,199	5											1	1
Montclair, N. J	21,150	13			6		1	1			2			
Morristown, N. J	12,507	3			19	1	1				1			
Nanticoke, Pa	18,509	6												
Newburyport, Mass	19,240	4									1	1		
North Adams, Mass	22,012	7	1		5						1			
Northampton, Mass	19,431	6	1		10		1				1	1		
Ottumwa, Iowa	22,012	6										1		
Palmer, Mass		5										2		
Palo Alto, Cal		1												
Plainfield, N. J	22,050	7			23		1				1	1		
Pottstown, Pa		5			2		1					1		
Sandusky, Ohio	19,989	10	1		15								1	
Saratoga Springs, N. Y		3			1									
South Bethlehem, Pa	19,973	8	5		6		2				1	1		
Steelton, Pa	14,246	5	2		1		2				3	1		
Warren, Pa	11,081	2					1							
Wilkinsburg, Pa	18,924	7			1		2				5	1		
Woburn, Mass	15,308	3			13							1		

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

Florida.—Reports received from the State board of health show as follows: Week ended March 23, 1912. Diphtheria present in 4 localities with 6 cases, malaria in 2 localities with 15 cases, smallpox in 5 counties with 21 cases, tuberculosis in 6 localities with 7 cases, typhoid fever in 9 localities with 13 cases.

Week ended March 30, 1912. Diphtheria present in 3 localities with 3 cases, malaria in 3 localities with 13 cases, smallpox in 3 counties with 16 cases, tuberculosis in 6 localities with 8 cases, typhoid fever in 3 localities with 6 cases.

New Jersey.—Four weeks ended March 10, 1912. Population, 2,537,167. Total number of deaths from all causes 3,277, including diphtheria 38, measles 28, scarlet fever 12, tuberculosis 385, typhoid fever 24.

FOREIGN AND INSULAR.

AUSTRALIA.

State of Victoria—Vital Statistics, 1910 and 1911.

The following statement was received from the Government statist at Melbourne:

Vital statistics of Victoria, 1910 and 1911.

	1910	1911
Deaths	14,736	15,217
Deaths due to:		
Phthisis	1,078	1,108
Other tubercular diseases	229	246
Cancer	1,081	1,100
Typhoid fever	139	95
Diphtheria	112	237
Whooping cough	65	40
Scarlet fever	28	6
Measles	32	74

The population of Victoria in 1901 was 1,201,070.

CHINA.

Hongkong—Plague—Smallpox—Quarantine against Port.

Surg. Brown reports March 4: During the week ended March 2, 8 cases of plague with 6 deaths and 83 cases of smallpox with 65 deaths were reported at Hongkong.

The Government of Burma declared quarantine against Hongkong as a plague-infected port March 1.

Examination of Rats.

During the week ended March 2, 1,932 rats were examined for plague infection. No plague-infected rat was found.

GREECE.

Cerebrospinal Meningitis.

During the week ended March 16, 22 cases of cerebrospinal meningitis were reported in 5 localities in Greece and during the week ended March 23, 106 cases in 25 localities.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911, a fatal case February 9, 1912, and 2 fatal cases February 25, 1912.

The last plague-infected rats reported found at Honokaa were 49, found during the week ended March 2, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

Week ended Mar. 23, 1912.

Total rats and mongoose taken	344
Rats trapped	332
Mongoose trapped	12
Rats examined bacteriologically	292
Classification of rats trapped:	
Mus alexandrianus	56
Mus musculus	66
Mus norvegicus	16
Mus rattus	194
Average number of traps set daily	1,720

Mosquito-Eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy, who is detailed as sanitary adviser to the governor of the Territory of Hawaii:

Mosquito-eradication measures conducted at Honolulu from March 11 to 16, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Ordered cleaned.	Oiled.	Drained.	Emptied.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.
Gutters, house	1,517	32	74	4	6			18		
Gutters, street	361	20	30	57	1					
Standing water	403	46	7	88	8		10			4
Cesspools	913	40	1	37				19		
Privy vaults	1,322	4	1	37				24		
Holes and low places	705	137	1	146	104		82			
Catch basins	460	25	15	97				4		
Leaky fixtures	33	1						15		
Plants, etc	39									
Swamps	147	13	3	8						2
Ponds	37	1		8						1
Troughs, tanks	185	3	4	2	8					
Tubs or other receptacles	862	73	6			241				
Tin cans, bottles	1,943	165				1,580				
Water barrels	512	54				103			16	6
Vacant houses	147									
Grease traps	238	1	18							

Number of wagonloads of tin cans collected	27
Number of legal notices to abate nuisances served	31
Number of nuisances abated	31

Gutters were removed or perforated on 36 buildings.

Mosquito-eradication measures conducted at Honolulu from Mar. 18 to 23, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Ordered cleaned.	Oiled.	Drained.	Emptied.	Removed.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.
Gutters, house	1,125	8	52				2		13		
Gutters, street	323	24		73							
Holes, low places, and standing water	1,288	193	10	445	54			76			8
Cesspools	1,048	50	5	56				33			
Privy vaults	1,528	17		40					17		
Catch basins	474	33		89							
Leaky fixtures	80	3							46		
Water-holding plants	87	13					13				
Swamps	177	9	9								
Ponds	24										
Troughs and tanks	394	25		5		39					
Tubs or other receptacles	580	74	2			296					
Tin cans, bottles	1,445	10				916					
Water barrels	1,884	80	16							64	
Vacant houses	39										

Area of swamp land drained ... acres	3
Number of legal notices to abate nuisances served	37
Number of nuisances abated	37
Number of rice plantations inspected	15
Number of loads of tin cans collected	23

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended February 24, 86 deaths from cholera and 48 from plague were reported at Calcutta; in all Bengal, 3,546 cases of plague with 3,394 deaths; in all India, 17,288 cases of plague with 15,040 deaths.

ITALY.

Examination of Emigrants.

Passed Asst. Surg. Robinson at Naples reports: Vessels inspected at Naples, Messina, and Palermo week ended March 23:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Mar. 20	Cretic	Boston	1,330	190	1,680
22	Berlin	New York	1,910	210	2,350
22	Calabria	do	598	45	820
	Total		3,838	445	4,850

MESSINA.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Mar. 22	Saxonia	New York			

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Mar. 18	Erodiade	New York			
18	Atlanta	do			
20	Laura	do			
23	Calabria	do	298	225	60
23	Auguste	New Orleans			
23	Alberta	New York			
23	Saxonia	do			
	Total		298	225	60

MEXICO.

Typhus Fever.

At Aguascalientes Consul Schmutz reports the occurrence of 3 deaths from typhus fever during the week ended March 31.

At Monterey the American consul general reports 1 death from typhus fever during the week ended March 31.

PERU.

Callao—Plague—Rat Infection.

Acting Asst. Surg. Castro-Gutierrez reports March 26: During the period from March 1 to 26, 12 cases of plague occurred at Callao. Dead rats are found on the streets and in houses.

RUSSIA.

Typhus Fever.

At Moscow Consul General Snodgrass reports the occurrence of 8 cases of typhus fever with 2 deaths during the two weeks ended March 2.

At Odessa Consul Grout reports 47 cases with 5 deaths for the week ended March 16, 1912.

At St. Petersburg Consul Conner reports 9 cases with 2 deaths for the week ended March 9.

SOUTH AFRICA.

Durban—Plague—Rat Infection.

The following information was received from the department of the interior at Pretoria: During the week ended March 2, 2 new cases of plague with 4 deaths occurred at Durban, and during the week ended March 9, one new case. The total number of cases reported to date is 14 with 10 deaths. Two new foci of rat infection were found February 26.

WEST INDIES.

Trinidad—Plague at Port of Spain.

The American consul reports, April 11, the occurrence of a third case of plague at Port of Spain, and April 13 a fourth case of plague.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING THE WEEK ENDED APR. 19, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Feb. 18-24	2	2	
Madras	Mar. 1-7	14	10	Presidency Feb. 1-29: Cases 4,856 deaths 3,054.[1]
Moulmine	Feb. 18-24	2	2	
Negapatam	do		2	
Pondicherry	Feb. 22-28	4	4	
Indo-China:				
Saigon	Feb. 13-Mar. 4	33	31	
Turkey in Asia:				
Adana	Mar. 12-20	6		18 cases in the province.
Aleppo	Mar. 3-9	5	3	

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[1] Bulletin Quarantenaire d'Egypte, Mar. 21.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended Apr. 19, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	Mar. 17-23	....	6	

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong	Feb. 25-Mar. 2	8	6	
India:				
Bombay	Mar. 3-9	41	46	
Karachi	do	80	60	
Indo-China:				
Saigon	Feb. 13-Mar. 4	6	3	
Java:				
Pasoeroean Residency	Feb. 18-Mar. 2	11	10	
Mauritius	Mar. 2-8	5	3	
Peru:				
Callao	Mar. 1-26	12	....	
South Africa:				
Durban	Feb. 24-Mar. 9	6	4	
West Indies:				
Trinidad—				
Port of Spain	Apr. 11-13	2	....	
At sea	Mar. 1-11	1	1	On s. s. Macedonia from Bombay to Aden.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	Mar. 19-24	1	1	
Austria-Hungary:				
Galicia	Mar. 10-16	2	....	
Canada:				
Halifax	Mar. 24-Apr. 6	2	....	
Toronto	Mar. 24-30	1	....	
Winnipeg	Apr. 1-6	1	....	
China:				
Dalny	Mar. 3-9	6	....	
Hongkong	Feb. 25-Mar. 2	83	65	
Egypt:				
Cairo	Feb. 27-Mar. 4	....	1	
Germany	Mar. 17-23	17	....	
Great Britain:				
Liverpool	do	1	....	
France:				
Paris	Mar. 10-16	7	1	
India:				
Bombay	Mar. 3-9	73	46	
Madras	do	29	8	
Indo-China:				
Saigon	Feb. 26-Mar. 4	9	6	
Italy:				
Genoa	Mar. 1-15	12	....	
Naples	Mar. 19-25	3	....	
Palermo	Mar. 17-23	30	12	
Turin	Mar. 18-24	1	....	
Java:				
Batavia	Feb. 18-Mar. 2	8	1	
Mexico:				
Guadalajara	Apr. 1-6	1	....	
San Luis Potosi	Feb. 4-10	1	....	
Tampico	Mar. 20-30	....	1	
Russia:				
Moscow	Feb. 18-Mar. 9	17	3	
Odessa	Mar. 3-16	3	....	
St. Petersburg	do	37	7	
Warsaw	Dec. 10-Feb. 10	214	98	
Spain:				
Cadiz	Feb. 1-29	....	5	
Valencia	Mar. 4-23	41	1	
South Africa:				
Durban	Feb. 18-24	1	....	
Straits Settlements:				
Penang	Feb. 11-17	1	....	
Singapore	do	1	1	
Teneriffe:				
Santa Cruz	Mar. 10-16	....	2	
Turkey in Asia:				
Beirut	do	95	5	
Turkey in Europe:				
Constantinople	Mar. 11-24	....	33	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

REPORTS RECEIVED FROM DEC. 30, 1911, TO APR. 12, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total Sept. 24-Dec. 26: Cases, 2,070; deaths, 1,508.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India:				
Bassein	Jan. 14-Feb. 17	107	88	
Calcutta	Nov. 5-Feb. 24		688	
Madras	Nov. 26-Mar. 2	526	428	Madras Presidency, Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-31: Cases, 13,411; deaths, 8,509.
Negapatam	Jan. 14-Feb. 17		77	
Rangoon	Oct. 1-Dec. 31	62	52	
Indo-China:				
Saigon	Nov. 20-Feb. 12	1,487	1,035	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands:				
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Jan. 27		755	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 12, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia				Provinces in Asia and Europe, Apr. 16–Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6–Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2–Mar. 4	16	5	
Aleppo	Jan. 26–Mar. 2	31	19	
Amara	Oct 15	1	1	
Basra	Oct. 22–28	14	10	
Erzeroum, vilayet	Sept. 11–16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20–28	10	10	
Kharput	Nov. 19–Dec. 30	47	47	
Jiddah	Dec. 2–24	323	310	
Mekka	Dec. 4–24	905	879	Sept. 1–Dec. 24: Cases, 1,048; deaths, 1,565.
Mersina	Dec. 1–7	2	1	
Osmania	Dec. 1–6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14–26	29		
Trebizond and vicinity	Sept. 18–23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24–Feb. 3	8	2	
Durazzo	Dec. 7–13	2		
Janina	Jan. 14–22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6–19	4	3	In Serres.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Mar. 23			Present.
Ceara	Jan. 1–Feb. 29		5	
Manaos	Nov. 19–Mar. 16		43	
Para	Dec. 9–16	1	1	
Pernambuco	Jan. 1–Feb. 15		10	
Canal Zone:				
Culebra Island quarantine	Jan. 1–31	1		From a vessel from Guayaquil.
Chile:				
Tocopilla	Apr. 11	38	12	
Ecuador:				
Bucay	Nov. 16–Feb. 29	7	2	
Duran	Dec. 1–Feb. 29	13	6	
Guayaquil	Nov. 16–Feb. 29	118	54	
Huigra	Feb. 1–29			1 case.
Milagro	Feb. 1–29	16	7	
Naranjito	do	2	2	
Yaguachi	do			1 case.
Mexico:				
Espita	Dec. 31–Jan. 6	1		
Kambul, hacienda	Feb. 21–27		7	
Maxcanu	Dec. 31–Jan. 6	1		
Merida	Nov. 12–Mar. 23	20	9	Total Aug. 1–Mar. 23: Cases, 65; deaths, 29.
Puerto Mexico (Coatzocoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4–7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31–Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19–25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16–Feb. 15	30	13	
Macuto	Mar. 16–19	1	1	
Maiquetia	Feb. 24–Mar. 9	3	1	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17–23	1	1	On a vessel en route from Manaos to Para.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 12, 1912.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Azores:				
Fayal	Jan. 10			Still present.
Terceira	do			Do.
Brazil:				
Bahia	Sept. 1–30		2	
Para	Dec. 24–Feb. 17	18	12	
Pernambuco	Oct. 1–Feb. 15		8	
Rio de Janeiro	Nov. 12–Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15–25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12–Mar. 27	12	6	
Pisagua	Nov. 1–30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9–Feb. 24	30	26	
Dutch East Indies:				
Java				Total Mar. 1–Dec. 30: Cases, 1,817; deaths, 1,324.
Pasoeroean Residency, Malang District.	Nov. 12–Feb. 17	93	51	
Soerobaya	Oct. 17–27	2		
Ecuador:				
Duran	Feb. 1–29	1		
Guayaquil	Nov. 16–Feb. 29	124	52	Dec. 16–Jan. 31: Reports not available because of revolution.
Egypt				Total Jan. 1–Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1–Mar. 15	45	30	Sept. 11–16: Cases, 50; deaths, 28.
Assouan	Jan. 1–Mar. 17	27	16	
Behera	Jan. 1–25	3	2	Sept. 11–16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16–Mar. 14	17	7	
Fayoum	Jan. 1–26	1		
Galioubeh	Jan. 1–Mar. 10	4	3	Oct. 5–Dec. 26: Cases, 1.
Garbieh	Jan. 1–Mar. 4	15	6	
Girgeh	Feb. 28	1	1	
Kena	Jan. 1–Mar. 7	26	17	Nov. 20–Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2–Mar. 7	3	1	
Minieh	Jan. 1–Mar. 15	13	3	Dec. 13: Cases, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13–15	1	1	From the interior via Bergamogo.
Hawaii:				
Honakaa	Feb. 9–Mar. 18	4	4	
India:				
Bombay	Nov. 19–Mar. 2	215	182	
Calcutta	Nov. 11–Feb. 17		224	
Karachi	Nov. 26–Mar. 2	242	208	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1–6	1	1	
Rangoon	Oct. 1–Dec. 31	50	50	
Bombay Presidency and Sind.	Oct. 29–Feb. 24	53,979	39,376	
Madras Presidency	do	9,171	7,166	
Bengal	do	22,567	18,954	
United Provinces	do	54,172	48,434	
Punjab	do	4,890	3,758	
Burma	do	1,042	939	
Eastern Bengal and Assam.	Jan. 1–Feb. 24	2	2	
Central Provinces	Oct. 29–Feb. 24	18,383	14,620	
Coorg	do	88	52	
Mysore State	do	8,162	6,309	
Hyderabad State	do	23,295	21,218	
Central India	do	7,496	6,187	
Rajputana and Ajmere Merwara.	do	950	772	
Kashmir	Feb. 3–23	38	19	
North West Province	Oct. 29–Feb. 24	2	2	Total for India, Oct. 29–Feb. 24: Cases, 204,237; deaths, 167,808. Total year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13–Feb. 12	27	2	
Mauritius	Nov. 3–Jan. 25	59	31	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 12, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Persia:				
Buchir	Feb. 4-24	19	5	
Peru:				
Departments—				
Callao	Oct. 1-21	1		In November, 1 case; in January, 3 cases with 2 deaths.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Mar. 13, 30 cases in the lazaretto at Trujillo.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Jan. 27		3	
South Africa:				
Durban	Jan. 14-Mar. 9	14	10	
Straits Settlements:				
Singapore	Nov. 5-Feb. 10	26	23	
Turkey in Asia:				
Jiddah	Jan. 13-Feb. 2	6	1	
Venezuela:				
Caracas	Mar. 12	1		
West Indies:				
Trinidad	Apr. 2	2		

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Feb. 26	16	7	And vicinity.
Argentina:				
Buenos Aires	Jan. 1-31		2	Oct. 1-31, 6 deaths. No deaths in Nov. or Dec., 1911.
Rosario	Oct. 1-Jan. 31		40	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	2		
Budapest	Jan. 4-10	25		
Galicia	Dec. 24-Mar. 2	3	1	
Krain	Jan. 14-20	7		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut
Tyrol	Jan. 14-Mar. 9	3		
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 1-Feb. 15		635	
Rio de Janeiro	Nov. 26-Feb. 24	18	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 16	5		
Nelson	Dec. 24-30	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-20	1		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Mar. 23	91		
Sarnia	Oct. 17-Mar. 23	43		
Toronto	Jan. 6-Feb. 10	2	1	
Windsor	Feb. 4-Mar. 16	8		
Quebec—				
Montreal	Dec. 17-Mar. 16	22		
Quebec	Dec. 10-Mar. 30	262	2	
Ceylon:				
Colombo	Nov. 12-Feb. 10	3		And vicinity.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 12, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Chile:				
Iquique	Dec. 10-Jan. 20	3	1	
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Mar. 9	68		Feb. 17—Decreasing.
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chenghai	Jan. 29-Feb. 10			Present.
Chungking	Nov. 18-Feb. 24			Do.
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-Feb. 24	420	306	
Kityang	Jan. 21-Feb. 3			Do.
Nanking	Dec. 10-Mar. 9			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-Feb. 11	4		
Port Said	Jan. 30-Feb. 4	1		
France:				
Havre	Mar. 10-16		4	
Marseille	Jan. 1-Feb. 29		4	Nov. 1-30, 1 death.
Paris	Dec. 3-Mar. 9	106	1	
Germany				Total, Dec. 31-Mar. 16: Cases, 46.
Hamburg	Jan. 21-27	1		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
London	Jan. 14-Feb. 24	6	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-Mar. 9	2		
India:				
Bombay	Nov. 19-Mar. 2	393	177	
Calcutta	Nov. 19-Feb. 17		23	
Madras	Nov. 26-Mar. 2	113	50	
Rangoon	Oct. 1-Dec. 31	61	17	
Indo-China:				
Saigon	Nov. 13-Feb. 12	28	1	
Italy:				
Genoa	Dec. 1-Jan. 31	33	2	
Leghorn	Dec. 16-Mar. 16	95	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-Mar. 9	88	1	
Palermo	Nov. 26-Mar. 16	2,569	873	
Turin	Jan. 15-Mar. 17	7		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	2	1	Jan. 20, 1 case from s. s. Suverio from Hongkong; Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12-18	1		
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Java:				
Batavia	Nov. 12-Feb. 10	35	11	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Mar. 9	5	2	
Juarez	Dec. 19-Mar. 9	14	5	
Magdalena	Dec. 23-Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-Mar. 19		11	Mar. 16, 25 cases in the lazaretto.
Mexico	Nov. 26-Feb. 17	135	67	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	Mar. 23, present in vicinity.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 12, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Dec. 30	3	1	
Tampico	Dec. 1-Mar. 1		14	
Tapachula	Nov. 1-Jan. 31		18	
Portugal:				
Lisbon	Dec. 9-Mar. 19	49		
Russia:				
Batum	Dec. 1-31	1		
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Feb. 10	30	10	
Odessa	Nov. 26-Feb. 24	21	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-Jan. 27	16		Oct. 1-Nov. 30; deaths, 2.
St. Petersburg	Nov. 19-Feb. 3	122	22	
Warsaw	Nov. 5-Dec. 2		185	
Siam:				
Bangkok	Nov. 5-Jan. 27		1,326	
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-Feb. 10	3		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Barcelona	Feb. 6-12		1	
Cadiz	Nov. 1-Jan. 31		22	
Madrid	Dec. 1-Jan. 31		3	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-Feb. 29		8	
Valencia	Dec. 3-Mar. 9	252	12	
Straits Settlements:				
Singapore	Nov. 19-Feb. 10	25	9	
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Mar. 9		46	
Turkey in Asia:				
Beirut	Dec. 3-Mar. 9	1,240	97	
Turkey in Europe:				
Constantinople	Dec. 4-Mar. 10		95	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aden	Mar. 11	45,859	33	2	1			1						
Aleppo	Mar. 9	200,000		5	3									
Aguas Calientes	Mar. 31	40,000	54						3			1	6	
Amsterdam	Mar. 23	582,586	128	27									1	3
Antwerp	Mar. 16	316,604	73	6									1	3
Athens	Mar. 19	250,010	14								2	2		
Barcelona	Mar. 14 to 23.	591,272	42							6	1	1		2
Batavia	Feb. 24	217,630						1	1					
Beirut	Mar. 16	80,000	26	2				5						
Belfast	Mar. 25	385,492	141	29						1	1			4
Birmingham	Mar. 23	842,512	236								2			21
Bombay	Mar. 9	979,445	743	48	36			46					14	
Bradford	Mar. 23	289,618	91	7								1	3	1
Bordeaux	..do	253,000	87	15									4	1
Brussels	Mar. 16	739,684	212	23							1	4	2	
Cairo	Mar. 4	689,439	458	21				1	4	3	1	5	1	
Catania	Mar. 22	207,000	100	4							2			
Christiana	Mar. 23	246,000	89	14							1	2		1
Cienfuegos	..do	33,578	10	1						1				
Colombo	Feb. 24	227,026	126	16						4				
	Mar. 2		141	22						13				
Constantinople	Mar. 17	1,000,000	305	27				19		6	5	1	8	
Copenhagen	Mar. 9		145	20								1	3	
Dundee	Mar. 23	171,006	65	4								1	1	3
Durban	Feb. 24	69,165	8											
Edinburgh	Mar. 16	321,200	82	9						1		2	4	
Ghent	..do	166,235	67	8									1	
Hamburg	..do	953,079	273	32							2	8	2	3
Havre	Mar. 23	136,159	64	6									2	
Hongkong	Feb. 24	336,488			3			50		2				
Kharput	Mar. 9	21,000	2	1									1	
Karachi	..do	148,000	153		60								28	
Kobe	Mar. 17	418,646	120							1		2		
La Guaira	Mar. 15	10,000	13	2						1				
Leeds	Mar. 23	445,568	123	9									1	1
Liege	Mar. 16	167,557	47	5									3	1
Liverpool	Mar. 23	752,055	220	22						1			7	4
London	..do	7,340,125	1,691							3	1	13	25	45
Lubec	Mar. 16	98,620	28	2						2	1			
Do	Mar. 23	100,000	25	2								2		1
Lyon	Feb. 11 Mar. 17	523,796	919	158						4	3	16	14	2
Madras	Mar. 9	578,660	339			10		8		1			1	
Manchester	Mar. 23	631,533	255	21						1		1	21	12
Monterey	Mar. 24	100,000	45	5						1	1			
Do	Mar. 31		56	6					1		2			
Montreal	Mar. 30	466,197	182	28							2	2		5
Moscow	Feb. 24	1,500,000	773	109					1	4	20	14	16	8
Do	Mar. 2		858	126				2	1		15	12	20	10
Munich	Mar. 9	610,000	170	26								3	1	1
Do	Mar. 16		161	26								1	1	2
Nagoya	Feb. 24	422,848	187									7		
Do	Mar. 2		151							2		2		
Do	Mar. 9		124							1		1		
Newcastle-on-Tyne	..do	269,193	98	13							2	1	1	1
Do	Mar. 16		91	7								1		1
Do	Mar. 23		62	9							1			
Nottingham	Mar. 16	260,000	92	5									9	3
Do	Mar. 23		76	7						2			4	
Nuremberg	Mar. 2	344,797	115	15							1		10	2
Odessa	Mar. 9	575,000	181	29					2	3		1		
Do	Mar. 16		155	19					3		1		1	1
Para	Mar. 9	185,000	83	8	1		2							
Paris	Mar. 16	2,888,110	1,044	260				1		5	9	4	59	9
Penang	Feb. 17	102,167	70	8						2				
Do	Feb. 24		33	13						1				
Porfirio Diaz	Mar. 23	16,000	8					2						
Port of Spain	Mar. 9	60,000	31	4						3				
Quebec	Mar. 30	78,200										1		

MORTALITY—Continued

Weekly mortality table, foreign and insular cities—Continued.

Cities	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Rotterdam	Mar. 16	437,870	128							2				
Do	Mar. 23		115								1			
Saigon	Feb. 19	220,000			1	8								
Do	Feb. 26				1	7								
Do	Mar. 4				1	16		6						
St. Petersburg	Mar. 9	908,708	754	162				3	2	9	21	9	14	9
San Luis Potosi	Feb. 6	82,476	59	5						5				
Santa Cruz de Teneriffe	Mar. 2	46,000	13	2				2						
Do	Mar. 16		19	4				2	1			2		
Do	Mar. 9		11	4				2		1				
Santiago de Cuba	..do	53,614	20	5						1				
Do	Mar. 16		21	1										
Santos	Jan. 13	85,000	62	5									2	1
Sarnia	Apr. 6	9,936								2			1	
Shanghai	Mar. 3	500,000	198	10							1	2	33	
Sheffield	Mar. 9	455,000	157	11								1		7
Do	Mar. 16		145	17										17
Do	Mar. 23		167	17						2	3	2		7
Singapore	Feb. 17	303,328	190	27						1				
Southampton	Mar. 16	120,891	37	2									1	3
Do	Mar. 23		26	4								1		
South Shields	Mar. 2	109,676	40	4								1		
Do	Mar. 16		30	1								1		1
Stettin	Mar. 9	240,000	107	15							1	2	1	
Do	Mar. 16		96	6							3	1		
Stockholm	Mar. 2	343,832	133	22									9	3
Do	Mar. 9		106	28										1
Do	Mar. 16		105	22										3
Stoke on Trent	Mar. 9	237,153	75	6							1	1		2
Do	Mar. 16		67	8							1		1	
Do	Mar. 23		73	4								1	3	1
Talcahuano	Mar. 2	28,000											1	1
Do	Mar. 9			2										1
Do	Mar. 16			3										2
Turin	Mar. 24	430,770	147	11								1	2	
Valencia	Mar. 16	240,000	100	7				1						
Vienna	Mar. 9	2,064,583	678	94							5	1	11	4
Warsaw	Dec. 16	797,093	306	32				13		5	16	1	8	
Do	Dec. 23		279	38				13		1	11	2	7	
Do	Dec. 30		298	34				10		2	6	5	8	1
Do	Jan. 6		260	28				15		4	13	5	5	6
Do	Jan. 13		269	36				8		2	12	2	5	5
Do	Jan. 20		273	36				15		2	5		2	5
Do	Jan. 27		284	34				6		3	4	2	4	6
Do	Feb. 3		271	31				8		4	4	1	2	3
Do	Feb. 10		284	39				10		2	5	2	1	4
Winnipeg	Mar. 23	151,958	36	1								1	1	
Do	Mar. 30		42	4							1	3	2	
Yokohama	Mar. 18	444,039										1		

MORTALITY—FOREIGN AND INSULAR COUNTRIES AND CITIES

(Untabulated.)

ARGENTINA—*Rosario.*—Month of December, 1911. Population, 208,990. Total number of deaths from all causes 445, including diphtheria 2, smallpox 7, tuberculosis 47, typhoid fever 4.

Month of January, 1912. Total number of deaths from all causes 403, including diphtheria 3, smallpox 2, tuberculosis 39, typhoid fever 6.

AUSTRALIA—*New Castle.*—Month of January, 1912. Population 60,050. Total number of deaths from all causes 47, including tuberculosis 4, typhoid fever 1.

Month of February, 1912. Total number of deaths from all causes 35, including diphtheria 3, tuberculosis 5.

BRAZIL—*Ceara.*—Month of February, 1912. Population 60,000. Total number of deaths from all causes 176, including tuberculosis 15, typhoid fever 9, yellow fever 4.

GERMANY—*Strassburg.*—Month of February, 1912. Population 182,426. Total number of deaths from all causes 245, including diphtheria 3, scarlet fever 1, tuberculosis 37, typhoid fever 1.

GREAT BRITAIN.—Week ended March 23, 1912.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 14.6 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 24.7 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Lisburn, viz, 8.6, and the highest at Kilkenny, viz, 44.6 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 15.4 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Coatbridge, viz, 8.3, and the highest at Greenock, viz, 27.5 per 1,000. The total number of deaths from all causes was 643, including diphtheria 8, measles 47, scarlet fever 7, typhoid fever 4.

GUAM.—Month of January, 1912. Population, 9,000. Total number of deaths from all causes 8, including tuberculosis 7. Cases reported: Hookworm, 265.

ITALY—*Genoa.*—Two weeks ended March 15, 1912. Population, 272,077. Total number of deaths from all causes 125, including diphtheria 7, typhoid fever 3.

MALTA.—Two weeks ended March 23, 1912. Population, 213,395. Total number of deaths from all causes 153, including measles 4, tuberculosis 8.

SOUTH AFRICA—*Johannesburg.*—Two weeks ended February 24, 1912. Population 237,220. Total number of deaths from all causes 172, including tuberculosis 26, typhoid fever 8.

Spain—*Cadiz.*—Month of February, 1912. Population, 67,306. Total number of deaths from all causes 194, including smallpox 5, tuberculosis 16.

Huelva.—Month of February, 1912. Population, 28,982. Total number of deaths from all causes 102, including measles 13, tuberculosis 10.

Tahiti.—Four weeks ended March 18, 1912. Population, 4,000. Total number of deaths from all causes 6. No deaths from contagious diseases.

Uruguay—*Montevideo.*—Month of January, 1912. Population, 321,224. Total number of deaths from all causes 538, including diphtheria 2, measles 1, tuberculosis 72, typhoid fever 12.

By authority of the Secretary of the Treasury:

Rupert Blue,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

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SEWAGE-POLLUTED WATER SUPPLIES IN RELATION TO INFANT MORTALITY.

By Allan J. McLaughlin, Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

The object of this bulletin is to invite attention to the excessive prevalence of "diarrhea and enteritis" of children in certain cities and towns, coincident with a polluted water supply. It will be apparent also that there is generally a parallelism between the curves for typhoid fever and enteritis in the winter months suggesting that water is a factor in the prevalence of both. Attention is invited to these conditions in the hope that cooperation between practicing physicians and local health officers will effect two things:

1. Investigation of deaths in the group classified as diarrhea and enteritis.
2. A wider use of municipal laboratories especially in the diagnosis of typhoid fever and dysentery.

These results can be attained only by the hearty cooperation of practicing physicians with the health officer. It is hoped that this cooperation will be effected, and out of this closer relation will come an earlier recognition and notification of typhoid fever and bacillary dysentery cases, and consequently more prompt and efficient control of the excreta of such patients.

An investigation of this group of diseases will probably reveal facts of the greatest value in relation to bacillary dysentery and other intestinal infections. No more promising field presents itself in the great problem of infant mortality than the study of the intestinal discharges of sick children. After giving due weight to the influence of climatic, racial, social, and economic conditions the so-called non-specific factors, one must admit that these after all are only predisposing factors and that the greater number of deaths from enteritis under 2 years are probably caused by specific organisms, some well known and others of which we know little. It has been suggested that the vital resistance to disease is low in neglected young infants and that this vital resistance is lowered by syphilis and improper artificial feeding. The inference is that normal inhabitants of the human intestine, such as the bacillus coli, may attain sufficient virulence in such cases to cause severe diarrheas and sometimes death. There is little convincing proof of such an occurrence. Failure to find well-known organisms, such as the bacillus dysenteriæ, in summer diarrheas of children, must be ascribed in a portion of the failures to faulty technique, but in the great majority of cases the diagnosis is made as diarrhea or enteritis without any bacteriologic procedure.

These neglected, improperly fed babies may prove easier victims than their healthier brothers and sisters to typhoid fever or dysentery, but such an explanation is not necessary to account for the absence of classical symptoms of well-known diseases in children.

Typical symptoms of well-known diseases are recognized with difficulty in children and are frequently absent. Nervous manifestations are often predominant. Cases of Asiatic cholera in young children in the Philippines often present none of the classic symptoms, but instead are frequently diagnosed as convulsions, meningitis, or enteritis.

The mistaken diagnoses and in consequence the uncontrolled excreta of contagious intestinal disease are not justly attributable to an atypical clinical picture, but must be charged to the failure to establish the diagnosis by bacteriologic methods.

It is not unlikely that because of the atypical clinical picture in children, well-known diseases often do escape recognition and are responsible for many deaths now recorded as due to inanition, convulsions, marasmus, or some other indefinite diagnosis. Because of the common presence of diarrhea in sick infants a great many cases are diagnosed as diarrhea or enteritis without effort to determine the specific cause.

It is not intended to suggest that these infectious agents are purely water-borne germs. On the contrary, as we know in typhoid fever, Asiatic cholera, and bacillary dysentery, the causative agent may be transmitted in many other ways, and it is reasonable to suppose that other pathogenic organisms from the human intestines have a similar versatility in modes of transmission. Attention is invited to the rôle played by water merely as one phase of the problem. A thorough investigation in any city will bring out clearly the relative importance of dirty fingers, flies, and other factors in transmission.

Contact is probably one of the greatest factors in the transmission of diarrhea and enteritis. It is also the factor responsible for the persistence of the disease from year to year. In the winter the contact factor is reduced, but operates at a low rate which increases in the hot months. Flies and other factors augment the increased rate due to contact in the hot season. It is because of the contact factor that the breast-fed infant does not escape. The greater prevalence in bottle-fed babies is probably due to greater opportunities for infection. Young infants drink little water, and the effect of polluted water on infant mortality is probably most active through being mixed with milk. To polluted water also must be charged the infections in children resulting from contact with those who have contracted the disease through water.

THE RELATION OF SEWAGE-POLLUTED WATER SUPPLIES TO THE GENERAL DEATH RATE.

In the Journal of Infectious Diseases, August 24, 1910, Sedgwick and MacNutt describe what they call the Mills-Reincke phenomenon.[1] This is a marked decrease in the general death rate of cities independent of the reduction in typhoid-fever deaths following the substitution of a safe for a polluted public water supply. In the same article these writers accentuate the statement of Allen Hazen concerning the relation of a polluted water supply to the general death rate, which is known as Hazen's theorem. Hazen's statement was as follows:

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[1] Sedgwick and MacNutt: Journ. Infec. Dis., vol. 7, Aug. 24, 1910, pp. 489-564.

> Where one death from typhoid fever has been avoided by the use of better water, a certain number of deaths, probably two or three, from other cases have been avoided.

Sedgwick and MacNutt found abundant evidence of the occurrence of the Mills-Reincke phenomenon in studying the statistics of Hamburg, Lawrence, Lowell, Albany, and Binghamton. They also found that Hazen's "quantitative expression for the Mills-Reincke phenomenon" when applied to the cities which they studied, was sound and conservative. In their work Sedgwick and MacNutt brought out the close relation between polluted water and infant mortality. This fact had also been demonstrated by Reincke of Hamburg who laid especial stress on the diarrheal diseases of children. The general death rate is based upon the total number of deaths into the production of which a great many factors enter. Some of these factors are fairly constant; others are subject to great variation. Obviously it is more difficult to establish the relation between polluted water and the sum of factors, many of which have nothing to do with water, than to show the relation between water and diseases which are commonly water-borne. This difficulty seemed to be reduced by substituting infant mortality for the general mortality. This also is a vague, indefinite method, as infant mortality is made up of a great many different entities, and is subject to considerable fluctuation, due to the epidemic diseases of childhood, the connection of which with water is problematical or doubtful to say the least.

For these reasons the Mills-Reincke phenomenon could not be expected to be always present. Coincident with the substitution of a safe for a polluted water supply, an epidemic of whooping cough, measles, or scarlet fever might more than offset the reduction due to water. Or there might be an increase in pneumonia or diphtheria, which would prevent the general death rate from dropping.

The following charts (1, 2, 3, 4) show four cities which, after the installation of better water supplies, experienced marked reduction in the typhoid-fever rate.

TABLE NO. 1.—CITY OF PITTSBURGH, PA.

Deaths from certain diseases before and after filtration of the public water supply.

Causes of death.	Before filtration.			After filtration.		
	1905	1906	1907	1908	1909	1910
All causes	9,951	10,097	9,930	9,030	8,343	9,603
Under 1 year	2,432	2,554	2,405	2,195	1,930	2,259
Typhoid fever	574	728	645	255	130	149
Measles	215	122	68	247	44	177
Scarlet fever	191	81	46	84	70	119
Whooping cough	165	86	205	48	68	77
Diphtheria	128	178	130	98	82	136
Tuberculosis	897	876	765	762	729	625
Broncho-pneumonia	232	367	508	566	....	....
Lobar pneumonia	1,081	873	830	686	745	....
Diarrhea and enteritis	831	973	915	822	735	949

Summary.

Causes of death.	Average annual number of deaths, 3 years, 1905, 1906, 1907.	Average annual number of deaths, 3 years, 1908, 1909, 1910.	Average yearly decrease in deaths.
All causes	9,993	8,992	1,001
Under 1 year	2,695	2,128	467
Typhoid fever	649	178	471
Diarrhea, under 2 years	906	835	71
Tuberculosis	846	705	141

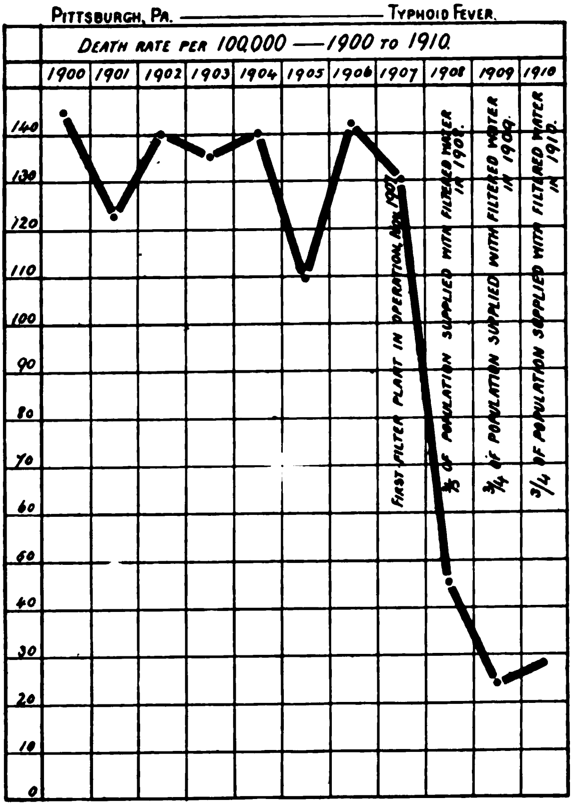


Chart No. 1.

Pittsburgh's reduction in typhoid fever was prompt and consistent. There has been an average of 1,000 actual deaths less each year since the installation of the filters. The average typhoid-fever reduction has been 471 deaths per year, so that for each death from typhoid fever avoided there have been 1.1 deaths less from all other causes. This is considerably less than Hazen's theorem suggests. There were 141 deaths less from tuberculosis, but the decline in tuberculosis has been gradual for some years.

Table No. 2.—City of Philadelphia, Pa.

Deaths from certain diseases before and after filtration of the public water supply.

Causes of death.	Before filtration.			After filtration.		
	1905	1906	1907	1908	1909	1910
All causes	25,058	27,768	27,476	25,926	25,029	27,045
Under 1 year	5,263	6,010	5,522	5,386	4,992	5,834
Typhoid fever	724	1,078	890	529	341	272
Measles	94	404	99	266	231	164
Scarlet fever	67	74	120	208	147	152
Whooping cough	168	396	214	225	122	318
Diphtheria	466	566	494	489	511	479
Tuberculosis	3,365	3,742	3,717	3,490	3,496	3,191
Broncho-pneumonia	525	826	709	848	....	....
Lobar pneumonia	1,388	1,519	1,667	1,389	1,356	....
Diarrhea and enteritis, under 2 years	1,739	2,184	1,886	1,835	1,791	2,336

Summary.

Causes of death.	Average annual number of deaths, 1905, 1906, 1907.	Average annual number of deaths, 1908, 1909, 1910.	Average yearly decrease in deaths.
All causes	26,767	26,000	767
Typhoid fever	897	381	516
Diarrhea and enteritis, under 2 years	1,936	1,987	....

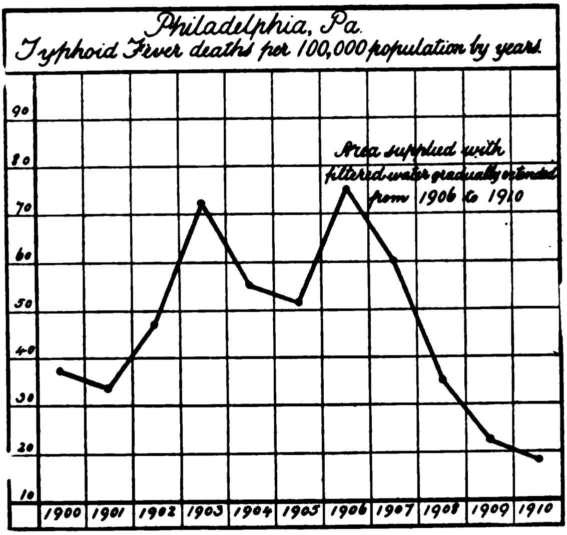


Chart No. 2.

Philadelphia does not conform to the quantitative expression of the Mills-Reincke phenomenon, taking an average of three years before and after the installation of the filters. Tuberculosis shows the same steady progressive fall both before and after filtration which was noted in Pittsburgh.

These two cities, Pittsburgh and Philadelphia, while they effected remarkable reductions in their typhoid fever rates, have the disadvantage of furnishing unfiltered polluted water to a portion of the population. Cincinnati and Columbus are better examples of the effect of improved water supplies, as their filtered-water systems cover the entire area of the city.

TABLE No. 3.—CITY OF CINCINNATI, OHIO.

Deaths from certain diseases before and after filtration of the public water supply.

Causes of death.	Before filtration.			After filtration.		
	1905	1906	1907	1908	1909	1910
All causes	6,609	7,179	6,423	6,450	5,938	6,319
Under 1 year	948	1,147	901	943	844	917
Typhoid fever	141	247	161	65	48	32
Measles	10	116	33	34	1	29
Scarlet fever	75	14	6	31	17	16
Whooping cough	57	19	13	29	22	30
Diphtheria	79	79	53	57	41	36
Tuberculosis	997	1,061	926	995	979	1,003
Broncho-pneumonia	140	194	169	162	....	....
Lobar pneumonia	441	389	373	404	362	....
Diarrhea and enteritis	245	366	265	301	282	328

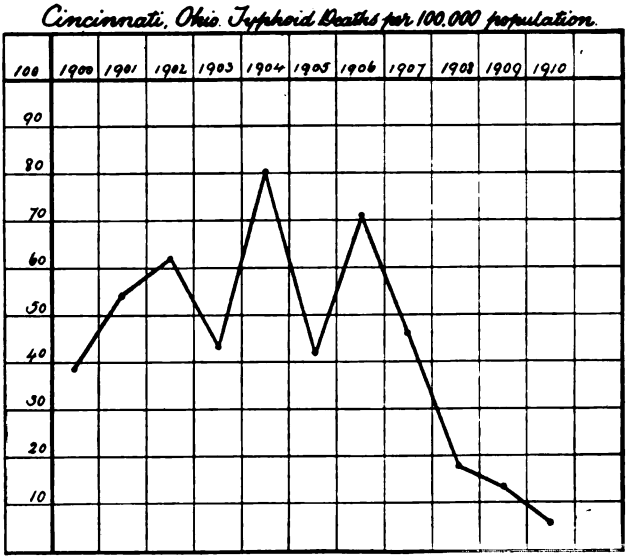


Chart No. 3.

Summary.

Causes of death.	Average annual number of deaths, 1905, 1906, 1907.	Average annual number of deaths, 1908, 1909, 1910.	Average yearly decrease in deaths.
All causes	6,737	6,235	502
Typhoid fever	183	48	135

TABLE NO. 4.—CITY OF COLUMBUS, OHIO.

Deaths from certain diseases, before and after filtration of the water supply.

Causes of death.	Before filtration.			After filtration.		
	1905	1906	1907	1908	1909	1910
All causes	2,224	2,361	2,470	2,489	2,365	2,810
Under 1 year	277	364	329	336	316	397
Typhoid fever	121	54	57	168	33	33
Measles	....	7	1	5	16	43
Scarlet fever	3	8	2	1	2	6
Whooping cough	14	7	12	15	5	19
Diphtheria	35	20	15	14	9	21
Tuberculosis	328	352	346	331	318	337
Broncho-pneumonia	31	35	52	30	....	....
Lobar pneumonia	184	179	160	144	113	....
Diarrhea and enteritis	67	71	78	51	83	115

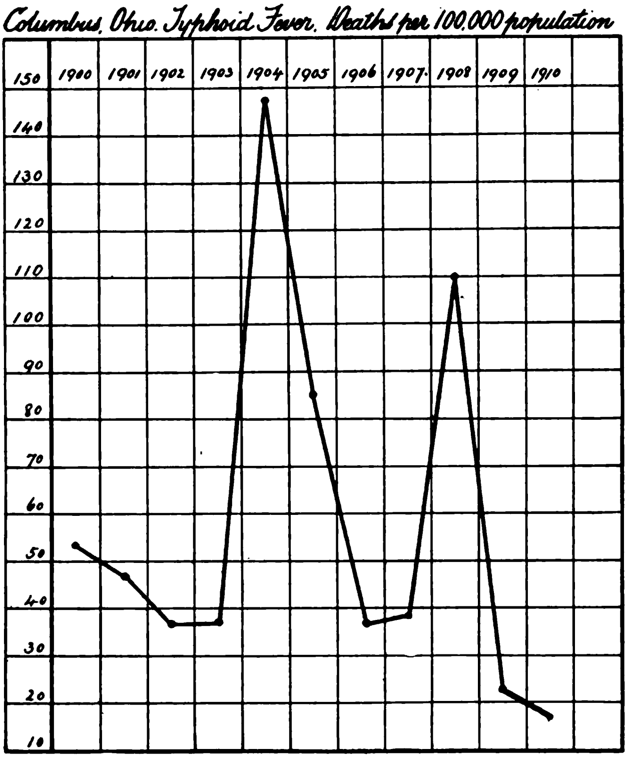


Chart No. 4.

Summary.

Causes of death.	Average annual number of deaths, two years, 1907, 1908.	Average annual number of deaths, 1909, 1910.	Average yearly decrease in deaths.
All causes	2,479	2,587	Increase.
Typhoid fever	225	66	159

Cincinnati seems to conform to Hazen's theorem, but Columbus does not, showing an increase in total deaths coincident with a marked typhoid decrease.

Many things may be cited which have a direct reducing influence on the general death rate—the use of diphtheria antitoxin, the campaign against tuberculosis, greater general knowledge of hygiene and the prevention of disease, the campaign for pure milk, and the educational work for the reduction of infant mortality. For these reasons if a gradual decline in the general death rate is noted coincident with or following an improvement in the public water supply, it can not be ascribed with any certainty to the improvement in the water.

If, however, there is a synchronous marked reduction below the average for a number of years, in certain diseases which are known to be water-borne, and especially if this reduction is effected in the winter and spring months, it is fair to assume that the improved water supply was the principal factor in this reduction.

Two distinct reasons are assigned for the reduction in the general mortality independently of typhoid fever which so often follows the installation of better water supplies. First, the increased vital resistance due to drinking a better water; second, exclusion of disease-producing organisms. It has been suggested that possibly a combination of these two is responsible. There is considerable evidence to show that the exclusion of disease-producing germs from the water is the principal factor in reducing the general mortality in so far as water is concerned.

In addition to the exclusion of the bacillus typhosus and the vibrio choleræ Asiaticæ, pure water means the exclusion of the causative organisms of bacillary dysentery, and probably other causative agents in diarrheal diseases of which we know little. The evidence that the so-called winter cholera is due to sewage-polluted water supplies may be considered incontrovertible. The exact nature of this alleged disease is unknown, but its existence and relation to polluted water have been shown conclusively at Erie, Pa., Escanaba, Lansing, and Mackinac Island, Mich., Michigan City, Ind., and other places.

There is no doubt that part of the reduction in the general death rate is due to a reduction in the deaths frequently certified to as "malaria," "typho-malarial fever," "typhoid pneumonia," and even "pneumonia" itself because of mistaken diagnosis. In many places there is very good reason to believe that there is a big reduction effected in fatal diarrhea of children really due to the bacillus typhosus. There is in some sections of the country a fixed idea that typhoid fever is a disease of adults and is rarely found in children. There is another common fallacy, that typhoid fever is a disease of summer and autumn only. It is due to these ideas that physicians are sometimes loath to diagnose typhoid fever in a child or to declare its existence in adults in the winter or spring: A health commissioner of one of the lake cities exhibited to the writer his record of cases reported in August, September, and October, pointing out the fact that there were nearly 10 cases reported for each death from typhoid fever. This was very creditable, but his records for January, February, March, and April showed that the cases reported scarcely exceeded the deaths. Very often the water supply is known to be polluted and the number of deaths from typhoid in the winter months shows that there is an undue prevalence of the disease in winter. The cases reported in relation to deaths would indicate perhaps a case mortality of 80 or 90 per cent. It is clear that in such instances the bulk of the nonfatal cases are not diagnosed as typhoid fever, and it is very probable that many fatal cases are certified as something else. In such cities it is not strange that the substitution of a safe for a polluted water supply effects a reduction not only in typhoid fever but in the general mortality as well.

DIARRHEA AND ENTERITIS UNDER 2 YEARS OF AGE IN THE UNITED STATES.

In the registration cities of the United States about 20 per cent of the total mortality occurs in infants under 1 year of age. The importance of infant mortality in relation to general death rate is at once apparent.

In considering infant mortality one of the greatest factors is the group of entities classified as diarrhea and enteritis. In the registration area in 1910 there were 154,373 deaths of children under 1 year, and 44,695 of these, or about 28 per cent, were ascribed to diarrhea and enteritis.

In the mortality statistics of the Bureau of the Census, under the name of diarrhea and enteritis, are grouped a number of different entities of diverse etiology. About 85 per cent of these deaths occur in children under two years of age. The fact that several distinct entities are included complicates the study of this group, and usually no attempt is made to separate these entities upon a specific etiologic basis. It is generally conceded, however, that certain nonspecific factors bear an etiologic relation to diarrhea and enteritis. At least the presence of one or more of these factors in marked degree is deemed sufficient to explain a high rate for diarrhea and enteritis in cities. These nonspecific etiologic factors may be divided into climatic, racial, social, and economic.

CLIMATIC INFLUENCES.

The influence of climate upon enteritis is conceded, but the manner in which this influence is exerted is still in doubt. The enteritis of children, including cholera infantum, is a summer disease, and if we exclude water or milk borne epidemics of specific enteritis, it should have a very low prevalence in the months from November to April. Naturally the southern cities, with their longer summer, on this ground alone are entitled to a higher rate for the hot-weather enteritis of children. Table No. 5 shows American cities with populations ranging from 100,000 to 300,000:

TABLE NO. 5.—*Cities having a population of from 100,000 to 300,000—Death rate per 100,000 from enteritis, all ages—Average for 8 years, 1901 to 1908.*

City.	Rate.	City.	Rate.
St. Joseph, Mo	37.5	Syracuse, N. Y	111.3
Omaha, Nebr	54.8	New Haven, Conn	116.6
St. Paul, Minn	57.5	Worcester, Mass	127.2
Minneapolis, Minn	58.5	Paterson, N. J	133.4
Columbus, Ohio	60.9	Providence, R. I	150.8
Louisville, Ky	63.9	Bridgeport, Conn	156.1
Kansas City, Mo	64.9	Nashville, Tenn	156.2
Dayton, Ohio	70.7	Atlanta, Ga	168
Denver, Colo	80.5	Jersey City, N. J	169.4
Indianapolis, Ind	84.7	Richmond, Va	176.3
Toledo, Ohio	86.6	Scranton, Pa	178.2
Rochester, N. Y	91.3	Lowell, Mass	274.1
Memphis, Tenn	101.1	Fall River, Mass	376.5
Grand Rapids, Mich	103.1		

It will be noted that the first 10 cities have rates below 90, and that every one of these is north of the thirty-eighth parallel of latitude and west of the eighty-third meridian.

It must not be inferred that the low rates in this area are entirely due to climatic influences. In most of these cities there is an absence of other factors, racial or economic, which play their part in the low rates.

On the other hand, favorable climatic conditions are not sufficient to prevent high rates in those northeastern cities, such as Fall River and Lowell, which possess the racial, social, or economic factors which make for high enteritis rates. In this class of cities (100,000 to 300,000) the eastern and southern cities, as shown above, have higher rates than those of the north and west, though probably for different reasons. The cities in the south have the climatic factor exaggerated greatly by the length of the summer and comparatively mild winters. The New England cities have high rates entirely independent of climate and depending in greatest measure upon certain economic conditions.

THE RACIAL FACTOR.

Racial characteristics are potent factors for good or ill in the prevention of infant mortality, although it is difficult to separate racial from economic influences. The pernicious effect of race is not because of the race itself but rather because the economic condition of the race is poor, and poverty and ignorance usually go hand in hand.

The southern cities suffer most from racial influences. The large negro population furnishes a very much higher rate per 100,000 for enteritis than the white population.

TABLE No. 6.—*Diarrhea and enteritis—Number of deaths per 100,000 population.*

Cities.	1906		1907		1908	
	White.	Colored.	White.	Colored.	White.	Colored.
Washington, D. C	98.4	216.1	88	227.1	94	202.5
Baltimore	123.1	172.9	143.3	224.1	122	153.8
New Orleans	161.4	218.7	176.8	229.4	166.3	239.8

These higher rates are due in greatest measure to the insanitary conditions under which the people live.

SOCIAL AND ECONOMIC CONDITIONS.

This includes the well-known influence of the slums of our large cities on infant mortality. It also includes the high mortality among children of working mothers in mill and factory towns. These conditions are due primarily to poverty and ignorance, and are accentuated in the foreign quarters and among the negro population. The rate to be expected from slum conditions should be in direct proportion to the size of the city. In this complex problem this is not always the case, as some of the small cities have high rates due to other causes than slums. In general, however, all cities in America of over 300,000 population have high rates. St. Louis, Mo., is the only exception.

TABLE NO. 7.—*Enteritis, all ages, death rate per 100,000—Average for eight years, 1901 to 1908—Cities with populations of over 300,000.*

Cities.	Rate.	Cities.	Rate.
Pittsburgh	205.1	Chicago	135.4
New Orleans	177.4	Newark	134.7
New York	162.6	Milwaukee	128.5
Buffalo	155.2	Detroit	122.9
Philadelphia	144.7	Cincinnati	117.9
Baltimore	140.7	Boston	115.4
Cleveland	136.6	St. Louis	88.1
Washington	135.6		

The high rates in these large cities are not surprising. New York because of its size should head the list, but New York has a very good water supply, and must give place to Pittsburgh, which previous to 1908 had a grossly polluted water supply, and the southern city of New Orleans, where the racial and climatic factors are accentuated. Buffalo's rate is altogether too high considering its population, but Buffalo also has suffered from a polluted water supply.

The appalling infant mortality in certain manufacturing cities and towns, especially those dependent on the steel and allied industries, is probably due to a combination of racial and economic factors. There is a very large percentage of foreigners in these cities, and probably a very high birth rate. The insanitary conditions are said to be very apparent. A special study of infant mortality in this class of industrial city would be necessary to determine accurately the real causes of this frightful infant mortality.

It is unfortunate that in America we are unable to secure accurate infant mortality rates because of lack of registration of births. The rates per 100,000 population are not an accurate index of the real infant mortality. Neither is the percentage of infant to total deaths a reliable guide. The true index of infant mortality is the death rate per 1,000 births.

For this reason the very high rates per 100,000 population in a city with a large foreign population and consequently high birth rate might seem much less significant if we had the ratio of deaths under 1 year to each 1,000 births.

In spite of these disadvantages the death rate per 100,000 for diarrhea and enteritis is an index, if an imperfect one, of the infant mortality, and in most instances in this country must be employed for lack of a better criterion.

If we could eliminate the enteritis due to water we would have in these rates a very fair index of any city's sanitary condition. The city which is too small to have slums and which in spite of a good water supply has a very high enteritis rate has also in all probability insanitary conditions which are not essentially different from the slums of the large cities, at least in their effect upon infant mortality.

The enteritis rate for the smaller cities (less than 100,000) is even more accurate as an index of sanitary conditions, if we exclude water-borne enteritis. Table No. 8 shows the average rate for five years (1904–1908) for enteritis in cities with populations between 50,000 and 100,000. These may be divided conveniently into three classes: The first 15 have rates from 50 to 100; the second 15 have rates from 100 to 150; the third group of 13 have rates ranging from 164.7 in Schenectady, N. Y., to 342.3 in Charleston, S. C.

TABLE No. 8.—*Enteritis, all ages—Death rate per 100,000 in cities with a population from 50,000 to 100,000.*

Cities.	Rate.
Canton, Ohio	50.9
Lincoln, Nebr	56.9
Saginaw, Mich	59.6
Covington, Ky	65.0
Harrisburg, Pa	65.2
Fort Wayne, Ind	72.2
Somerville, Mass	75.9
Portland, Me	77.4
Evansville, Ind	82.3
Springfield, Mass	87.6
Altoona, Pa	91.6
Lynn, Mass	94.4
Springfield, Ill	95.3
Terre Haute, Ind	96.2
Hartford, Conn	97.0
Duluth, Minn	103.1
Wilmington, Del	106.3
Troy, N. Y	112.4
Camden, N. J	113.9
Erie, Pa	116.6
Savannah, Ga	119.0
Reading, Pa	121.8
Johnstown, Pa	122.6
South Bend, Ind	128.7
Utica, N. Y	133.7
Allentown, Pa	134.9
Mobile, Ala	135.8
Pawtucket, R. I	137.1
Hoboken, N. J	145.7
Wilkes-Barre, Pa	147.0
Schenectady, N. Y	164.7
Youngstown, Ohio	186.5
Elizabeth, N. J	191.7
Manchester, N. H	195.8
Holyoke, Mass	199.8
Yonkers, N. Y	207.7
Waterbury, Conn	217.9
Bayonne, N. J	224.9
Passaic, N. J	230.7
Lawrence, Mass	257.1
New Bedford, Mass	257.6
San Antonio, Tex	268.3
Charleston, S. C	342.3

The first group of 15 with rates below 100 contains no city south of the thirty-eighth parallel of latitude. Some eastern cities are in this group. They are not "mill" towns, however, but cities of quite a different type, as Somerville, Mass., Hartford, Conn., and Harrisburg, Pa.

The second group has cities from all sections. The rates 100 to 150 are too high for cities of this size, and an intensive study of conditions will show the special reason or reasons in each case.

Duluth's rate of 103 is higher than one would expect. St. Paul and Minneapolis have rates below 60; Duluth's rate should be no higher. There is no negro factor to raise the rate, but there is quite a large foreign population. South Bend, like Duluth, has very much higher rates than cities in the surrounding territory. Wilmington, Del., Savannah, Ga., and Mobile, Ala., have rates no higher than might be expected with the large negro population. The excessive rates in group 3 are best explained by the insanitary conditions, high birth rate, maternal neglect, ignorance, and poverty of mill and factory towns. The last two cities are southern cities, and probably find the explanation of their high rates in climatic and racial influences.

During an investigation of cities in the drainage basin of the Great Lakes the writer was struck with the high rates for diarrhea and enteritis in some northern cities coincident with polluted water supplies and an absence of slums. A close relation also seemed to exist between the rates for enteritis and typhoid fever. The following table shows 12 New York cities. The first four have good water supplies, good sanitary conditions, and low rates for both typhoid and enteritis. The second four have good water supplies, low typhoid rate, bad sanitary conditions (mill and factory towns), and high enteritis rates. The last group of four have polluted water supplies, fair to good sanitary conditions, high typhoid-fever rates, and high enteritis rates.

TABLE No. 9.—*Cities in New York State.*

Cities.	Typhoid-fever death rate per 100,000, average, 10 years, 1900-1909.	Character of water supply.	Death rate, enteritis—average for 5 years, 1904-1908.	Remarks.
Rochester	13.7	Good	89.5	Sanitary conditions good.
Syracuse	14.8	do	105.5	
Albany	21.9	do	80.0	
Binghamton	20.9	do	104.7	
Utica	17.3	do	133.7	Mill and factory towns.
Schenectady	22.4	do	164.7	
Amsterdam	18.6	do	150.7	
Yonkers	9.5	do	207.7	
Cohoes	83.8	Polluted	170.9	Mill town.
Niagara Falls	129.1	do	173.2	Sanitary conditions exclusive of water, good.
Ogdensburg	148.5	do	175.0	
Buffalo	27.0	do	151.6	

A similar relation between typhoid and enteritis was found in Michigan, although coincidently high rates were not always associated with a polluted water supply.

The Michigan rates are for diarrhea and enteritis under 2 years instead of for all ages.

TABLE No. 10.—*Michigan cities, population from 12,000 to 50,000—Deaths per 100,000, average for 6 years, 1905-1910.*

Cities.	Typhoid fever.	Enteritis.	Water supply.
Escanaba	136	185	Polluted.
Sault Ste. Marie	52.3	134.6	Good.
Alpena	46.7	162.6	Polluted.
Ironwood	43.5	124.5	Doubtful.
Port Huron	42	78.6	Polluted.
Flint	43	63	Do.
Traverse City	42	53.5	Do.
Bay City	37.3	56.3	Do.
Lansing	33.3	56.6	Good.
Battle Creek	31.3	44	Doubtful.
Kalamazoo	29.5	59	Good.
Jackson	28.3	45.5	Do.
Muskegon	24.7	59.8	Doubtful.
Saginaw	24.6	42	Wells safe; river polluted.
Pontiac	24.5	44	Good.
Ann Arbor	22.1	18.6	Do.
Manistee	20.8	48	Do.

This table shows that in every instance, except Traverse City, a typhoid-fever rate above 40 was accompanied by an enteritis rate above 60. This is a high rate for Michigan cities, considering climatic, racial, and social economic conditions, as this rate is for enteritis under 2 years only. On the other hand, the cities with good water supplies had low rates for typhoid fever and enteritis except Sault Ste. Marie, which will be referred to later.

It is probable that contamination of food and drink with human feces is a very great factor in the mortality ascribed to diarrhea and enteritis. When there is gross pollution of a public water supply, as at Niagara Falls or Escanaba, this contamination may be transmitted by water, but from experience with typhoid fever and cholera it may be assumed that this fecal contamination is very often effected independently of the water supply by dirty fingers, flies, and in other ways. The enteritis so transmitted would necessarily have its great-

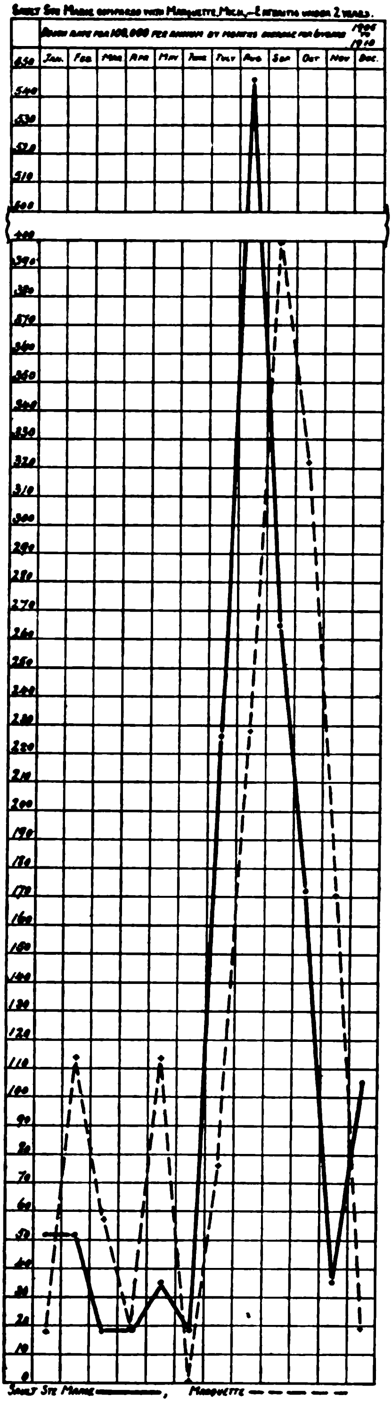

Sault Ste Marie compared with Marquette, Mich.,—Infants under 2 years.
Death rate per 100,000 per annum by months average for 5 years 1906 to 1910
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sep.
Oct.
Nov.
Dec.
550
540
530
520
510
500
400
390
380
370
360
350
340
330
320
310
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Sault Ste Marie ———, Marquette — — — — —

Chart No. 5.

est prevalence in the hot months and its rate would be high in direct proportion to the insanitary surrounding of the victims.

Sault Ste. Marie has a very high rate for enteritis. The public water supply must be classed as good. As a consequence it is not strange that the winter and spring rate in Sault Ste. Marie is much lower than that of Marquette with its polluted water supply. Chart No. 5 shows the difference in the seasonal prevalence.

Ishpeming has a low typhoid-fever rate and a water supply which is probably safe. It has a very high death rate for diarrhea and enteritis. This is probably due to the insanitary conditions under which the foreign population lives. The greatest seasonal prevalence is in the summer and autumn months with practically no deaths in the winter and spring months. Chart No. 6 shows the seasonal prevalence in Ishpeming.

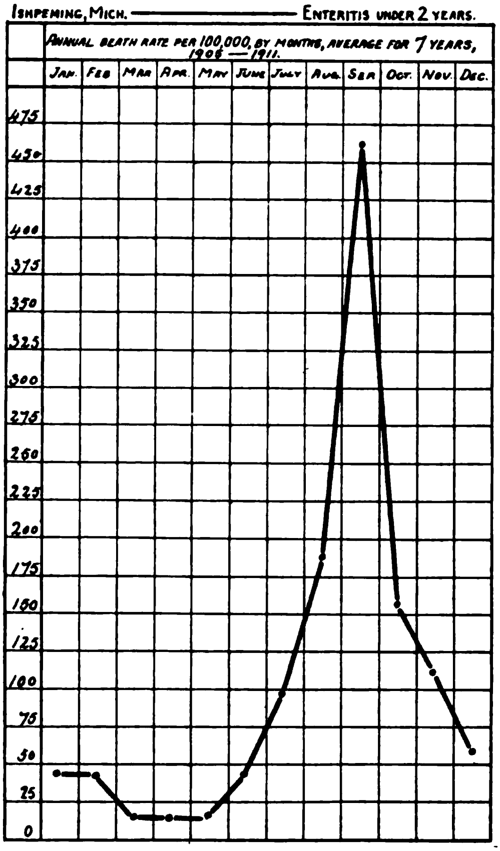


Chart No. 6.

The factors operating in the summer months—flies, fingers, careless disposal of excreta, bad personal hygiene—are scarcely separable from the other factors associated with poverty and ignorance, including maternal neglect.

From a study of statistics and conditions in cities and towns in the drainage basin of the Great Lakes, the writer is inclined to believe that the reduction in the general death rate coincident with and following improvement in the water supply independent of typhoid reduction, is largely due to the reduction effected in the group of entities classified as diarrhea and enteritis.

THE RELATION OF POLLUTED WATER SUPPLIES TO THE SO-CALLED DIARRHEA AND ENTERITIS OF CHILDREN.

In attempting to estimate the importance of water in the prevalence of diarrhea and enteritis it will be necessary to consider the deaths by months. This disease, or group of diseases, if not water borne, has a relatively low prevalence in the winter and spring months. This point is well illustrated by the seasonal prevalence in cities with good water supplies. In dealing with seasonal prevalence the climatic factor is very prominent. For this reason it would be manifestly unfair to compare southern with northern cities. In the following consideration of enteritis the writer will confine himself to cities north of the thirty-ninth parallel and east of the Mississippi River.

In cities with good public water supplies the seasonal prevalence of the diarrhea and enteritis of children is uniform, and Chart No. 7 illustrates this seasonal prevalence in the city of New York. If the public water supply is not a factor, the greatest number of deaths should occur in July and August.

TABLE No. 11.—*Cities having a population of over 250,000 and enteritis rates above 100 per 100,000.*

Cities.	Enteritis under 2 years—annual death rate per 100,000. Entire year, 1910.	Summer, June to November, 1910.	Winter, December to May, 1910.	Ratio of summer to winter enteritis.	Character of water supply.
Jersey City, N. J	146	259	37	7 to 1	Safe.
Detroit, Mich	123	212	34	6.2 to 1	Doubtful: exposed to pollution.
Boston, Mass	100	172	32	5.3 to 1	Good.
Newark, N. J	113	189	42	4.4 to 1	Do.
New York, N. Y	123	198	46	4.3 to 1	Do.
Buffalo, N. Y	132	209	53	3.9 to 1	Polluted at times.
Pittsburgh, Pa	179	277	77	3.6 to 1	One-fourth of the population uses unfiltered water.
Cleveland, Ohio	169	261	73	3.5 to 1	Polluted at times.
Philadelphia, Pa	150	241	70	3.4 to 1	A portion of the city uses unfiltered polluted water.
Chicago, Ill	159	248	102	2.4 to 1	Polluted.
Milwaukee, Wis	117	147	89	1.6 to 1	Do.

A study of the statistics of cities with good water supplies and fairly high enteritis rates brings out an interesting phenomenon. The mean annual enteritis death rate per 100,000 for the months of June, July, August, September, October, and November bears a definite relation to the rate for December, January, February, March, April, and May. This will be referred to as the ratio between the summer and winter enteritis rates. If very low annual rates for enteritis prevail, this relation is disturbed; but if the rates are above the normal, even if very excessive, as in some mill towns, the ratio is preserved, provided the public water supply is not polluted.

In large cities with enteritis rate per 100,000 of more than 100 for the entire year the ratio of summer to winter enteritis should be not less than 4 to 1, provided the public water supply is not grossly ted.

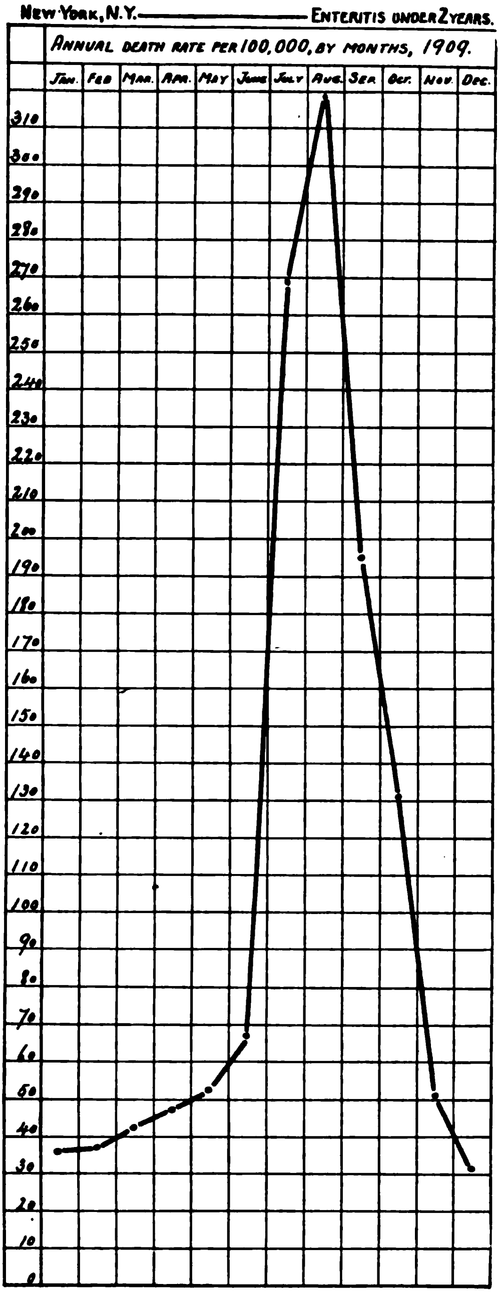

New York, N.Y.
Enteritis under 2 years.
Annual death rate per 100,000, by months, 1909.
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sep.
Oct.
Nov.
Dec.
310
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

Chart No. 7.

TABLE No. 12.—*Cities having populations from 100,000 to 250,000 and enteritis rates above 90 per 100,000.*

Cities.	Death rate per 100,000; enteritis under 2 years, 1910.	Ratio of summer to winter enteritis.	Cities.	Death rate per 100,000; enteritis under 2 years. 1910.	Ratio of summer to winter enteritis.
Paterson, N. J.	117.3	8.8 to 1	Cambridge, Mass.	94.2	6.0 to 1
Worcester, Mass.	134.3	7.9 to 1	Rochester, N. Y.	99.7	5.4 to 1
Fall River, Mass.	373.8	7.3 to 1	Grand Rapids, Mich.	95.4	5.7 to 1
Scranton, Pa.	230.8	7.3 to 1	Bridgeport, Conn.	123.7	4.7 to 1
Lowell, Mass.	252.0	6.9 to 1	Syracuse, N. Y.	122.4	3.7 to 1
Dayton, Ohio	91.6	6.6 to 1			

TABLE No. 13.—*Cities in the State of New York.*

Cities.	Enteritis under 2 years, death rate per 100,000, average for 3 years, 1908-1910.		Ratio of summer to winter diarrhea.	Character of water supply.
	Summer, June to November.	Winter, December to May.		
Amsterdam	342	27	12.5 to 1	Good.
Utica	254	29	8.7 to 1	Do.
Troy	169	21	8.0 to 1	Do.
Binghamton	162	21	7.7 to 1	Safe.
Schenectady	229	34	6.7 to 1	Good.
Syracuse	207	31	6.6 to 1	Do.
Rochester	152	26	5.8 to 1	Do.
Albany	95	19	5.0 to 1	Do.
New York	208	44	4.7 to 1	Do.
Yonkers	337	74	4.5 to 1	Do.
Buffalo	106	29	3.6 to 1	Polluted.
Niagara Falls	191	93	2.0 to 1	Grossly polluted.
Cohoes	221	133	1.6 to 1	Do.

It is clear also that no deduction regarding the part played by water can be drawn safely from high rates in winter months alone unless these rates are more than one-fourth of the rates for the summer months. For example, high rates in Yonkers or Amsterdam in December, January, February, March, April, and May do not necessarily indicate polluted water, in view of the fact that the summer rates are very high and more than four times those of the winter months.

High rates in the winter months with relatively low rates in the summer months, as in Cohoes and Niagara Falls, leave no escape from the conviction that the polluted water supply is a big factor in this mortality. In the territory north of the thirty-eighth parallel and east of the Rocky Mountains there is no factor in the transmission of intestinal diseases except water, which operates consistently with greatest intensity from December to May.

The possibility of milk causing outbreaks of intestinal diseases in winter or spring months is admitted, but milk is unlikely to operate with greater intensity in winter consistently for a number of years.

NIAGARA FALLS, N.Y.; BINGHAMTON, N.Y. —— ENTERITIS UNDER 2 YEARS.

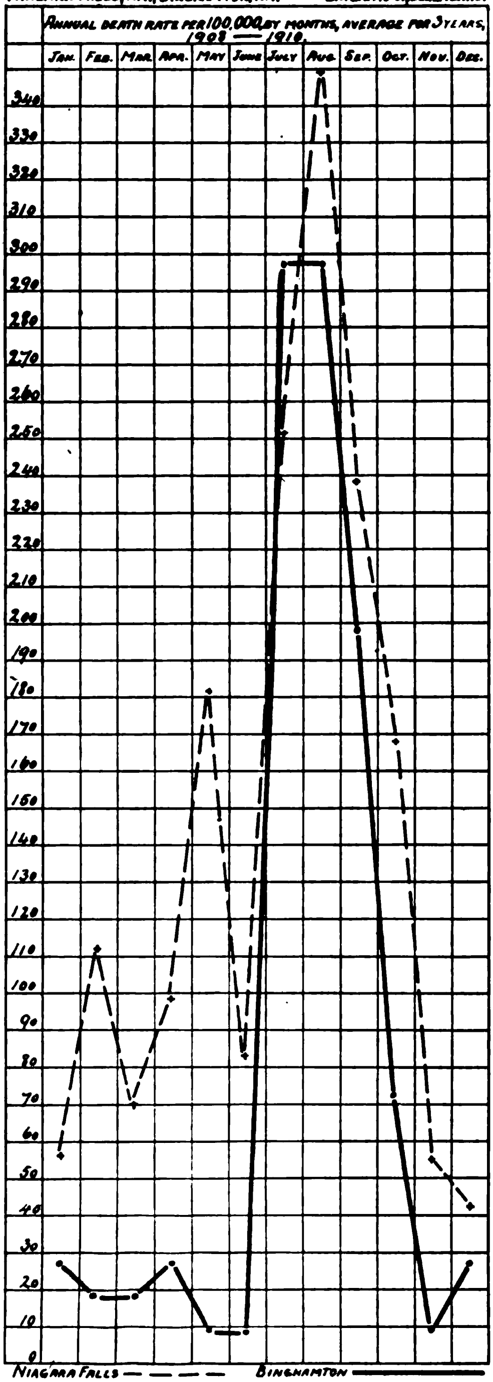


Chart No. 8.

Table No. 14.—*Cities in the State of Michigan.*

Cities.	Enteritis under two years, death rate per 100,000, average for six years, 1905 to 1910.		Ratio of summer to winter enteritis.	Character of water supply.
	Summer—June to November.	Winter—December to May.		
Battle Creek	77	9	8.5 to 1	Fair.
Jackson	89	11	8 to 1	Pure.
Flint	111	15	7.4 to 1	Wells pure; river polluted.
Lansing	96	14	6.8 to 1	Good.
Sault Ste. Marie	278	43	6.4 to 1	Do.
Bay City	101	16	6.3 to 1	Doubtful.
Grand Rapids	140	27.2	5.1 to 1	Do.
Port Huron	135	33	4 to 1	Polluted.
Marquette	199	57	3.4 to 1	Do.
Alpena	257	91	2.8 to 1	Do.
Escanaba	209	168	1.2 to 1	Grossly polluted.

In Michigan it is probable that the summer enteritis rate should be more than four times the winter rate. The three cities which fall below the ratio of 4 to 1 all have polluted water supplies, and this is also true of Grand Rapids and Port Huron, the next on the list.

Chart No. 8 shows the seasonal prevalence in Niagara Falls, compared with Binghamton, N. Y. Niagara Falls has a grossly polluted water supply, while Binghamton has a safe one.

Chart No. 9 shows Cohoes compared with Amsterdam. Cohoes has a grossly polluted water supply, while Amsterdam's supply is rated as good. Amsterdam has a very much higher rate in July, August, and September than Cohoes, and if no water factor entered into the problem should have the higher rate in the winter and spring months. The high rate in Cohoes for December, January, and February is very striking.

Chart No. 10 shows Marquette, Mich., compared with the normal curve for the State of Michigan. The sharp rises in February and May are noticeable. Marquette has had a very high typhoid rate and the water supply has been grossly polluted at times.

Chart No. 11 shows Buffalo, N. Y., compared with Washington, D. C. Buffalo has a polluted water supply. Washington has a safe water supply. Buffalo has a lower rate than Washington in the summer and should have a lower winter rate if water was not a factor. The high rates in March, April, and May in Buffalo are well shown on the chart.

Chart No. 12 compares Chicago and New York. The Chicago rates are abnormally high from January to June and a distinct peak is noticeable in March.

Chart No. 13 shows Milwaukee compared with Jersey City. Milwaukee has a sewage-polluted water supply while Jersey City's supply is safe. The abnormal peak in March and the very high rates in March and April are very striking and suggestive. Jersey City, with its very high rate in July, August, and September, would have a higher rate than Milwaukee during the winter months if the winter rates depended upon other factors than water.

Chart 14 shows Cleveland compared with Jersey City. Cleveland has had a polluted water supply in the winter and spring months.

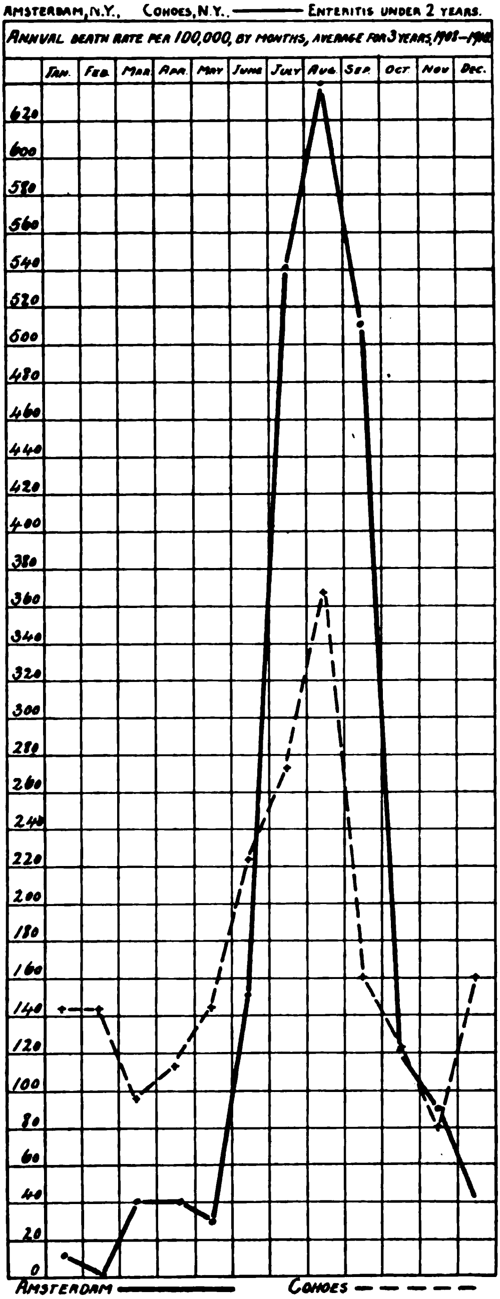

AMSTERDAM, N.Y., COHOES, N.Y. ——— ENTERITIS UNDER 2 YEARS.
ANNUAL DEATH RATE PER 100,000, BY MONTHS, AVERAGE FOR 3 YEARS, 1908–1910
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEP.
OCT.
NOV.
DEC.
620
600
580
560
540
520
500
480
460
440
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
AMSTERDAM
COHOES

Chart No. 9.

The high rates in the first half of the year and the sharp rise in March are remarkable. Compare this March rise with that of Chicago and Milwaukee in the same months. (Chart No. 15.) The similarity is striking, in view of the similarity in the character of their water supplies.

Chart 16 shows the average rate for six years in the city of Alpena compared with the rate for the entire State of Michigan. Not only is the annual rate for Alpena excessive, but the very high rates in the first half of the year and especially the peak for May are noticeable features of this chart. Alpena uses an unfiltered and polluted water supply.

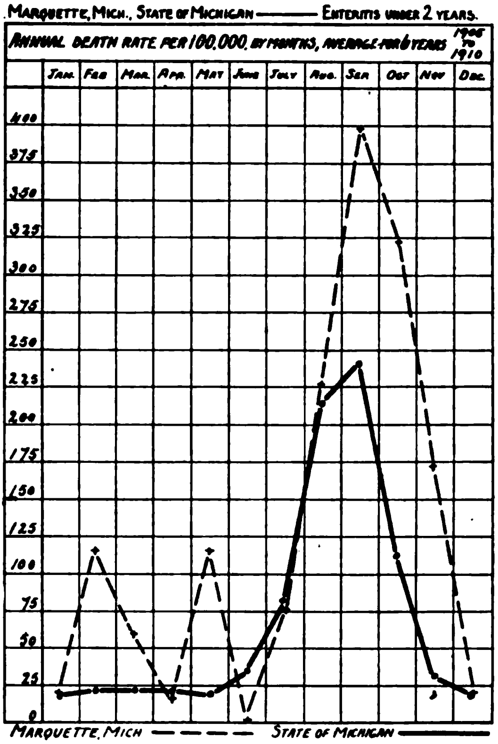


Chart No. 10.

Chart 17 shows the average rate for diarrhea and enteritis in Escanaba, Mich., for six years by months. The chart speaks for itself. Escanaba has been notorious for its polluted water supply and outbreaks of "winter cholera" and typhoid fever.

In 1910 a mechanical filter plant was in operation in Escanaba. Its operation was not entirely satisfactory, but it seemed to have a marked effect upon the typhoid-fever rate and winter enteritis of children in the winter and spring of 1910.

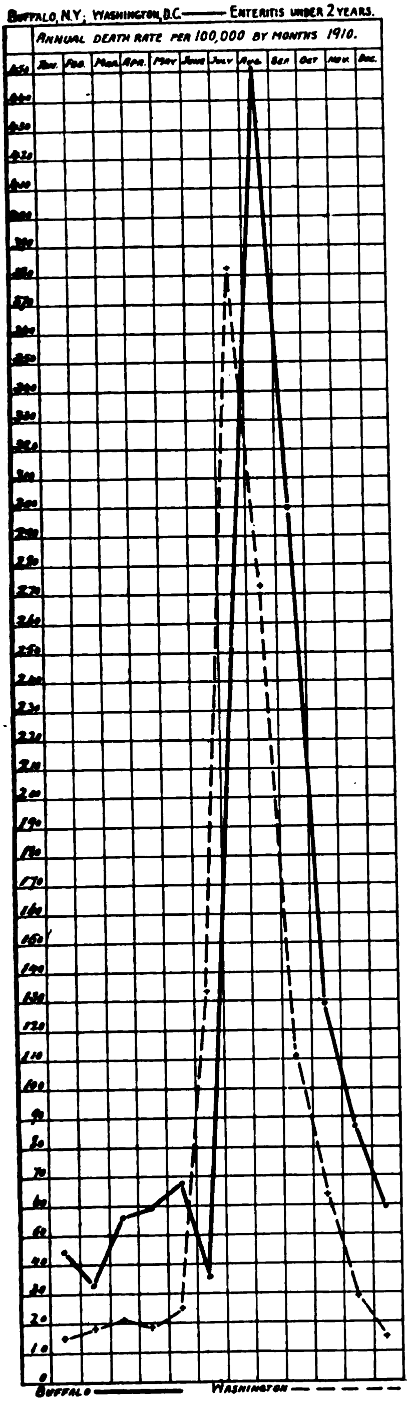


Chart No. 11.

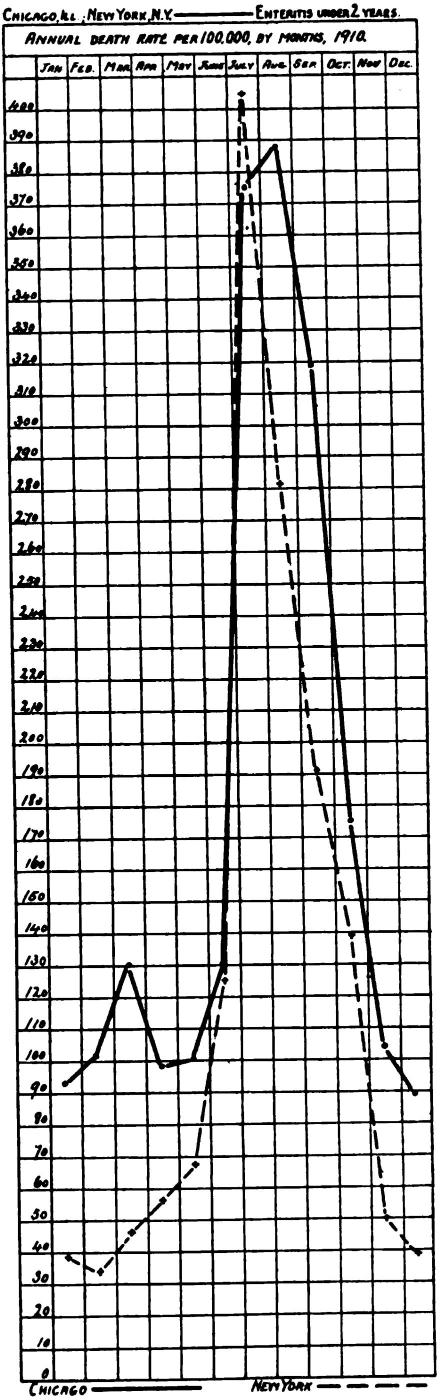
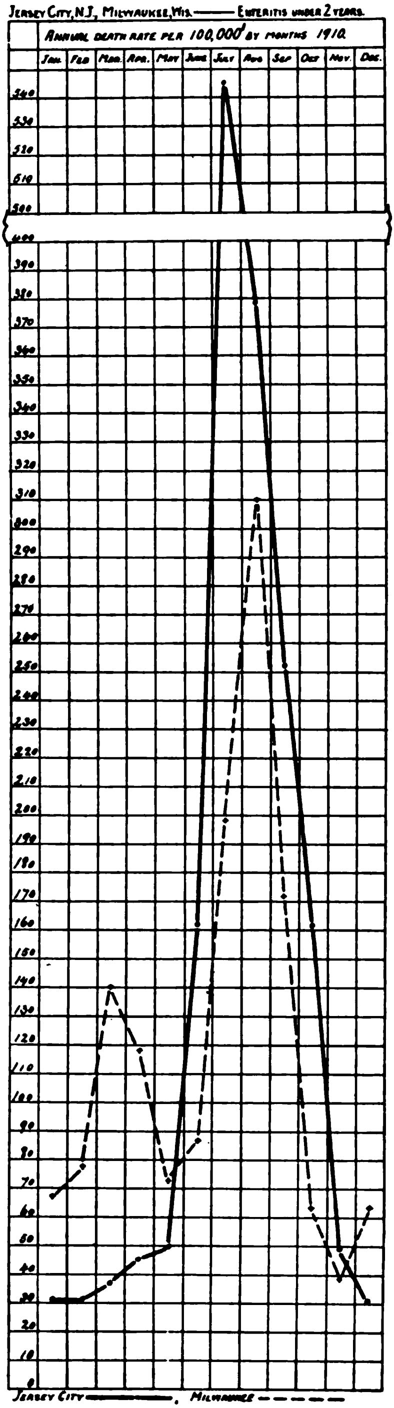


Chart No. 12.



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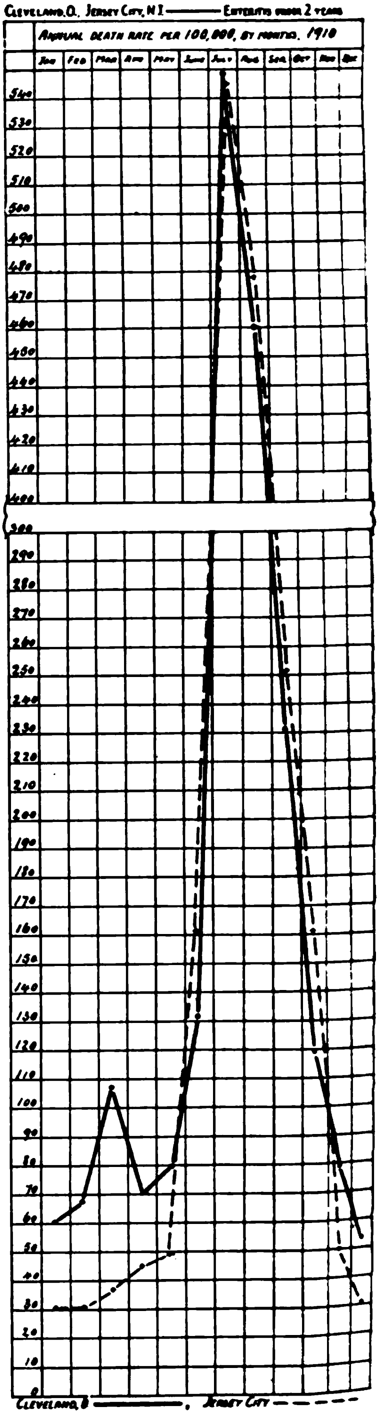

Chart No. 14.

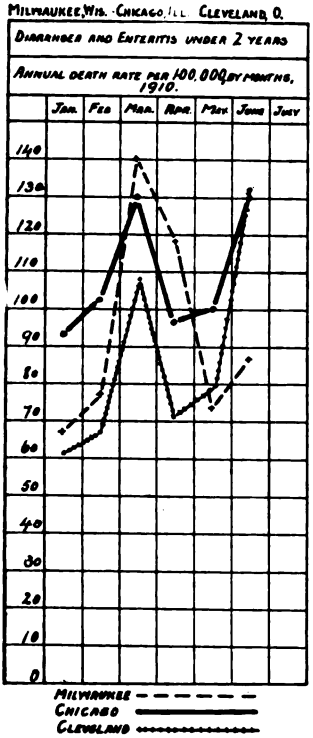

Chart No. 15.

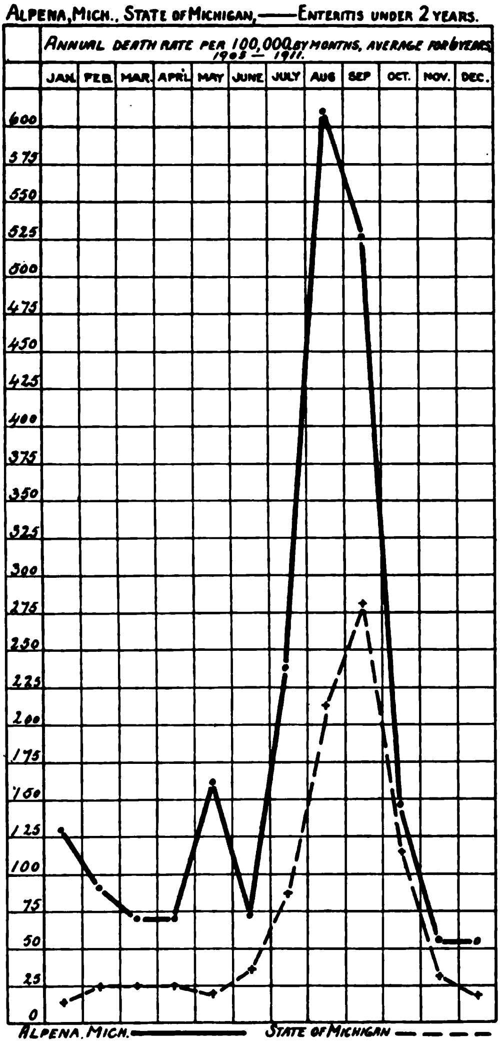

Chart No. 16.

The following table shows the reductions which occurred in the general death rate, the typhoid rate, and the enteritis rate in 1910, following the use of filtered water.

TABLE No. 15.—*Escanaba, Mich.*

Year.	Death rate per 1,000 inhabitants.	Total deaths.	Typhoid-fever deaths.	Enteritis under 2 years; deaths January to June.
1908........	18	228	12	7
1909........	16.8	213	28	7
1910........	15.5	206	8	1

THE RELATION OF TYPHOID FEVER TO DIARRHEA AND ENTERITIS.

There is a close relation between the curves for typhoid fever and diarrhea and enteritis in many cities, especially in the winter and spring months. This relation is usually disturbed by the sudden rise of the enteritis curve in June or July while the typhoid rise is usually a month later, and not so high.

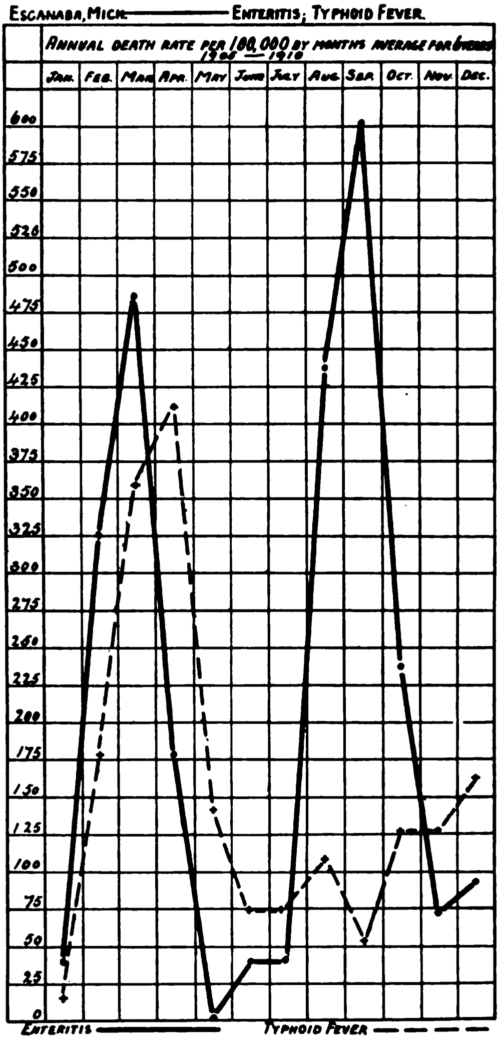

Chart No. 17.

Chart No. 17 shows the relation between the curves for enteritis and typhoid fever by months in Escanaba, Mich., taking an average for six years. Note the abnormally high peaks for both diseases in the spring months and that the spring speak for typhoid is one month later than the pronounced enteritis peak in March. Chart No. 18 shows the curves for typhoid and enteritis compared in Washington,

D. C. Washington has a safe water supply and the rates from January to June for both enteritis and typhoid are low. The close relation between the two curves is apparent.

Chart No. 19 shows the same comparison made in Battle Creek, Mich. Battle Creek's water supply is not above suspicion. Enteritis and typhoid fever show synchronous peaks in the curve in January and March.

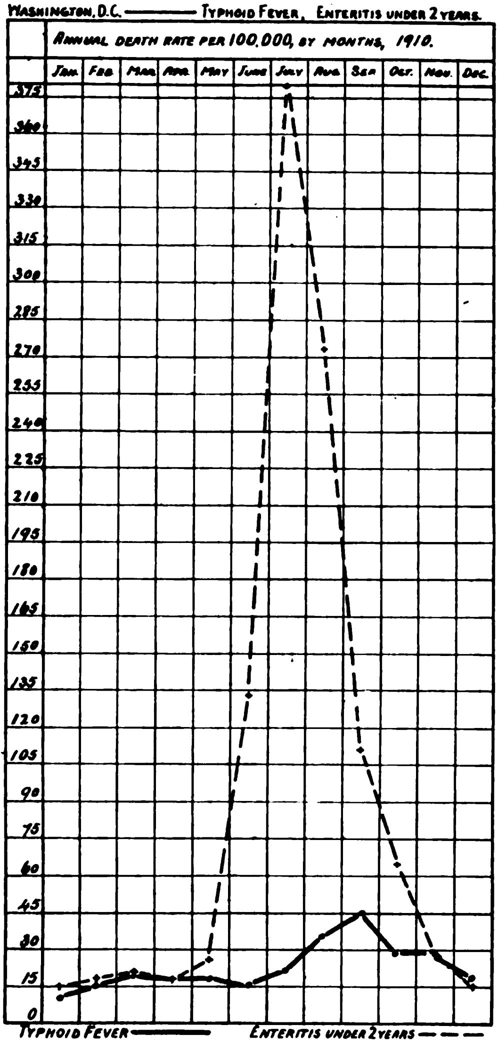

Chart No. 18.

Pittsburgh in 1910 had a high typhoid-fever rate in the months from January to June. It also had an abnormally high enteritis rate for the same period and a very pronounced peak in March. This relation is shown in chart No. 20.

Milwaukee in 1910 had an unusually high typhoid-fever rate from January to June. The enteritis rate was also very high considering the season, with a pronounced peak in March. Chart No. 21 shows the typhoid and enteritis curves compared in Milwaukee.

Chart No. 22 shows the relation between these curves in Cleveland. The winter and spring typhoid in Cleveland shows a peak in April. The enteritis curve shows a marked rise one month earlier, in March.

Cohoes is another example of very high rates for both typhoid and enteritis in the winter and spring. Chart No. 23 shows the relation between the curves. In addition to the high rates in January, February, March, and April the coincident rise in both curves in December is notable.

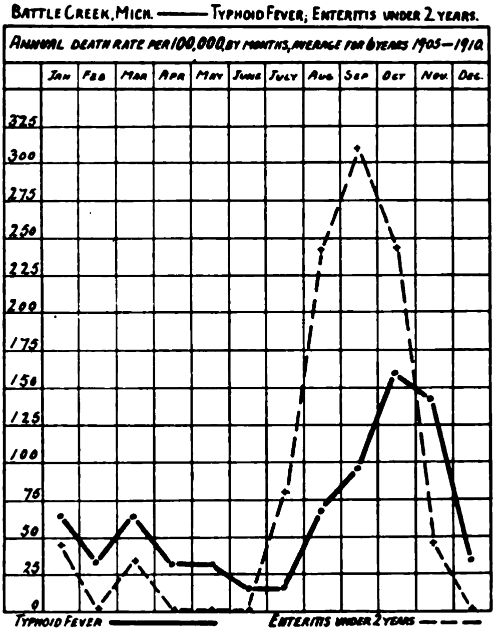

Chart No. 19.

Chart No. 24 shows the curves for typhoid fever and enteritis compared in Niagara Falls. The winter peak for typhoid is pronounced and one month later than the peak for enteritis. On the other hand the rise in May is synchronous and the two curves drop almost together in June.

The relation between enteritis in children and typhoid fever can not be said to be clear. Certain facts, however, stand out prominently in studying the statistics. In cities which are too small to have slums and which have abnormally high typhoid-fever rates there is also an excessive mortality from enteritis and diarrhea in children under 2 years of age. Cities of the same class with low typhoid rates have comparatively low rates for enteritis and diarrhea of children.

The seasonal prevalence also closely follows that of typhoid. If the excessive typhoid in these cities is due to water then we have a high enteritis rate, not only in the summer and autumn, but also in the winter and spring months. If the typhoid is independent of the water supply, then the enteritis rate like that of typhoid, will be high in the regular season from July to October and low during the remainder of the year.

The effect of polluted water upon young infants may be indirect as well as direct. The polluted water may be used to dilute milk, to wash milk bottles, or directly as a beverage. Further, the polluted water supply, which causes numerous typhoid cases in cities or towns, is responsible indirectly for the contact infections in children resulting from such cases. That many of these occur in children can scarcely be doubted, even if they remain undiagnosed as typhoid and enter the statistics as diarrhea or enteritis.

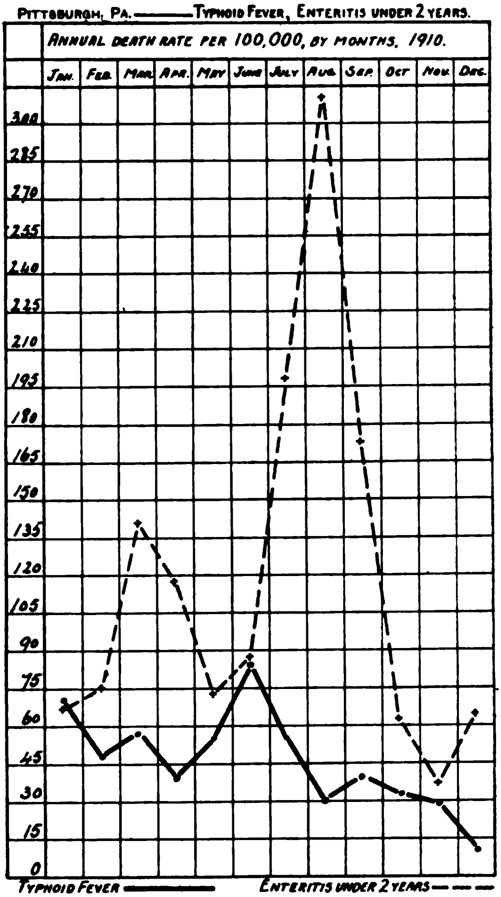

Chart No. 20.

The idea that typhoid fever is not a disease of childhood lacks satisfactory evidence to support it. The mere fact that the bulk of the reported cases is made up of adults is not proof. The writer's experience with cholera,[1] an analogous disease epidemiologically, suggests that typhoid, like cholera, may be much more frequent in children than popularly supposed, and that a tendency to light or atypical symptoms in children may be expected.

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[1] McLaughlin, Allan J., "Some observations upon cholera in children," Philippine Journal of Science, sec. B, 1909, vol. 4, p. 363.

Mere parallelism does not indicate identity of causation. It indicates rather similar modes of transmission and, possibly, identity in a portion of the cases.

Often the unusual prevalence in winter and spring, instead of showing parallelism between the curves, shows that the typhoid peak is one month later than the peak for enteritis. This same peculiarity is noticeable in the outbreaks of the so-called "winter cholera." After a gross pollution of the water supply by sewage, there follows a sudden massive outbreak of "winter cholera."

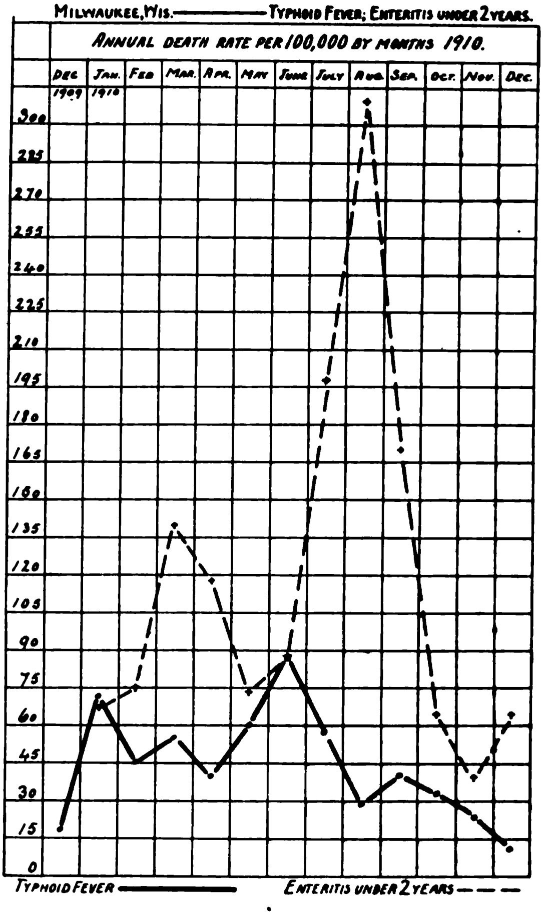

Chart No. 21.

This is usually followed about one month later by a typhoid outbreak. The exact causation of winter cholera is obscure. It has nothing to do with season, however, and one of the best examples of this disease occurred at Mackinac Island in August. Whatever the real relation between typhoid fever and enteritis or diarrhea of children may be, one fact is clear, that the same causes operate to cause

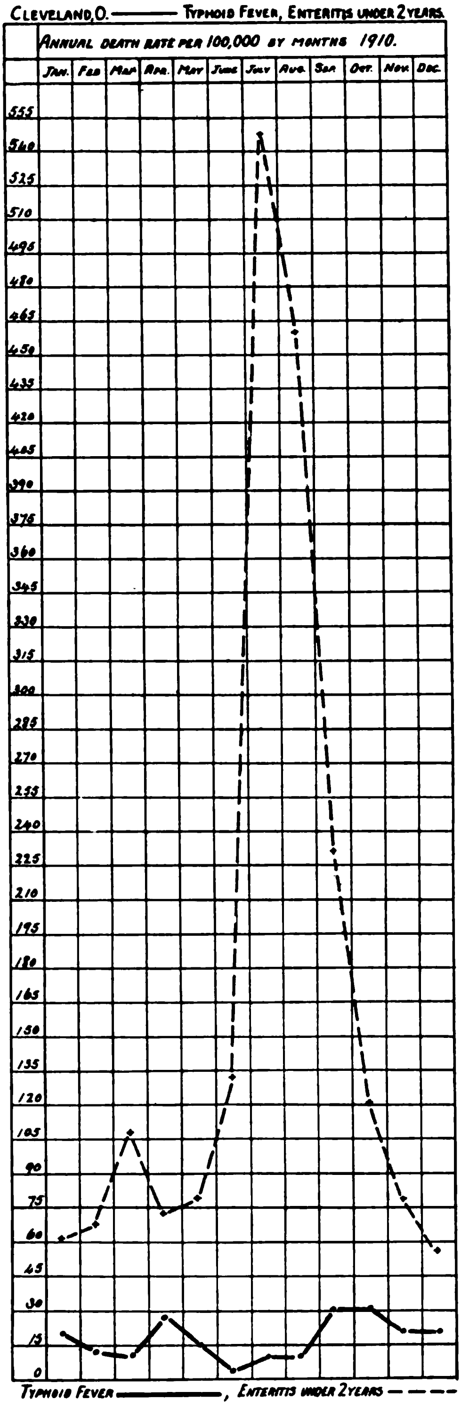
CLEVELAND, O. —— TYPHOID FEVER, ENTERITIS UNDER 2 YEARS.
ANNUAL DEATH RATE PER 100,000 BY MONTHS 1910.
JAN.
FEB
MAR
APR.
MAY
JUNE
JULY
AUG.
SEP.
OCT.
NOV.
DEC.
555
540
525
510
495
480
465
450
435
420
405
390
375
360
345
330
315
300
285
270
255
240
225
210
195
180
165
150
135
120
105
90
75
60
45
30
15
0
TYPHOID FEVER ——, ENTERITIS UNDER 2 YEARS — — — —

Chart No. 22.

excessive prevalence in both. It is probable that cases of typhoid in children under 2 years in many cities are often diagnosed as enteritis. It must be remembered, however, that the causative agent of bacillary dysentery is transmitted in the same way and by the same media as that of typhoid. There are too many cases of fatal illness in children under 2 years classed as diarrhea and enteritis, and an exhaustive investigation should be made to establish the real cause of death in enteritis and diarrhea of children. Without such an investigation it is impossible to assign the real cause of the excessive child mortality from diarrhea and enteritis. In cities of less than 50,000 population without slums and which are not "mill" towns an enteritis rate in children under 2 years above 100 deaths per 100,000 indicates prevalence of an acute intestinal disease preventable by the same measures

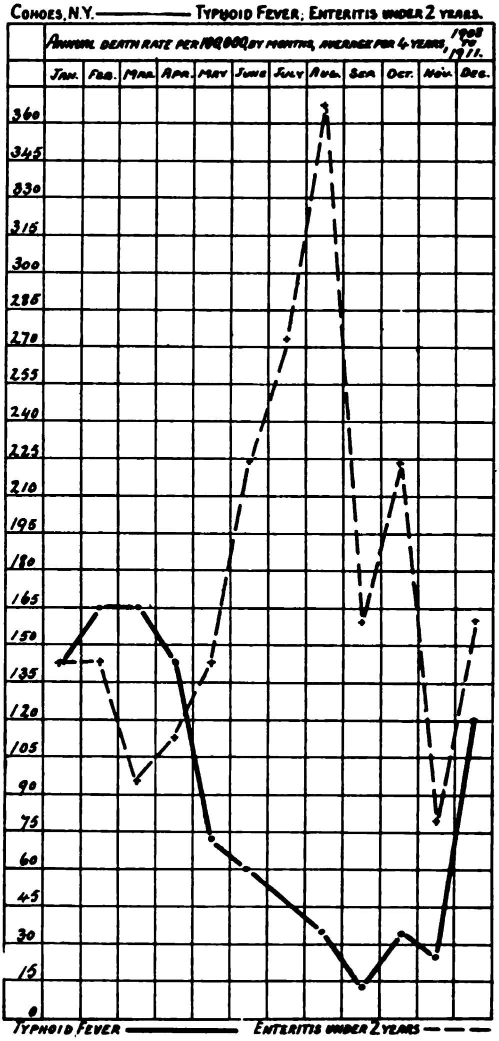

Chart No. 23.

which prevent typhoid fever. It is probable that in such cities proper enforcement of prophylactic measures against typhoid fever would reduce the enteritis rate below 40 deaths per 100,000. Enforcement of prophylactic measures would include the installation of pure water supplies and proper sewerage systems, coupled with a vigorous campaign against the insanitary outdoor privy and the dangerous shallow well.

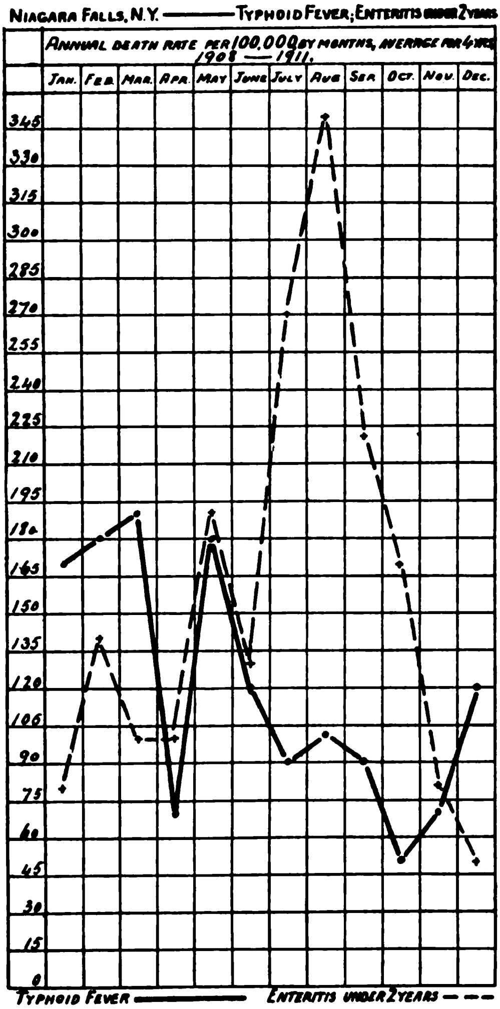

Chart No. 24.

CONCLUSIONS.

1. From a study of a considerable number of cities it seems probable that the reduction in the general death rate which has been called the Mills-Reincke phenomenon, when present, is due in greatest measure to the reduction in those diseases which are grouped under the heading of diarrhea and enteritis of children.

2. The Mills-Reincke phenomenon and Hazen's theorem are not always apparent after betterment of the public water supply because

of wide fluctuations in the death rates for contagious diseases which are not water borne.

3. Because of the reducing influence on death rates of the campaign against tuberculosis, the improvement in control of milk supplies, the use of diphtheria antitoxin, education of the public in personal hygiene, and the prevention of disease it is difficult to say in some instances to what extent an improved water supply is a factor in the reduction of the general death rate.

It is certain, however, that in practically every instance, in addition to a lessened number of deaths from typhoid fever, the substitution of a safe for a polluted public water supply results in the saving of many lives from diseases which are not reported as typhoid fever.

The question of the identity of these diseases can be answered only after an exhaustive investigation of deaths, and especially of that group of entities which is now reported under the heading of "Diarrhea and enteritis under 2 years."

4. Enteritis or diarrhea in children as a fatal disease may be expected to be excessively prevalent in large cities with slum districts and a large foreign population. The same excessive prevalence may be expected in so-called mill towns, where the mothers are operators in the mills and child neglect is common. Under these conditions the mortality among poor children is very great, but it is almost entirely in the period from July to October, provided the public water supply is safe.

5. In cities with safe water supplies and enteritis rates above the average for the State the ratio of summer and autumn to winter and spring enteritis should be at least 4 to 1, taking the months of June, July, August, September, October, and November for the summer and autumn enteritis, and the months of December, January, February, March, April, and May for the winter and spring enteritis.

6. Cities with grossly polluted water supplies often have a winter and spring enteritis which is more than one-fourth of the summer and autumn enteritis. If such a phenomenon is present each year for several years, it suggests that the polluted water supply is a factor in the enteritis mortality in winter and spring.

7. The relation between typhoid fever and the diarrhea and enteritis of children is not clear. There is often a striking parallelism in seasonal prevalence between the curves, but mere parallelism does not necessarily indicate identity. It may and usually does mean similarity in modes of transmission. Often in the winter and spring months there is a sharp rise in both diseases, the typhoid peak being one month later than that of diarrhea and enteritis.

Cities without slums and with good sanitary conditions except grossly polluted water supplies have excessively high rates for both typhoid fever and diarrhea and enteritis in the winter and spring months. Cities with good water supplies and low typhoid-fever rates may have high rates for diarrhea and enteritis under 2 years, but the rates in winter and spring will be relatively low.

8. Closer cooperation between the practicing physician and the local health departments is necessary in order to carry out an investigation of the true nature of the diarrhea and enteritis in children under 2 years, now classified as diarrhea and enteritis.

9. There should be a wider employment of municipal laboratories by practicing physicians, especially in the diagnosis of typhoid fever and examination of the discharges of sick children.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

COLUMBUS, OHIO.

MILK—APPLICATION FOR PERMIT TO SELL.

SEC. 3. (Application for permits.) All applications for permits shall be signed by the applicant, and when received by the dairy inspector shall be placed on file, and the name of such applicant shall be entered in a book of registration kept for such purpose. As soon as possible after an application is received at the health office for a permit to sell milk, the dairy inspector shall visit the dairy or place of business of such applicant, and make such observation and gather such information as will enable the board to properly consider such application. Should the dairy or place of business of such applicant be located more than 80 miles from the city of Columbus he shall either furnish a certificate of qualification of all dairies from which it is proposed milk be obtained, according to the requirements of the sanitary code, made by some State or municipal sanitary authority, acceptable to the board, or pay the cost and expense of making such inspection by the health department; and for such purpose there shall be deposited by said applicant with the clerk of the board an amount sufficient to cover the estimated cost of such inspection, based upon a compensation to the inspector of $4 per day and the necessary expenses of the inspector in going to and from the place of inspection and while engaged therein; any surplus of said deposit not required for said purposes to be returned to the applicant when the permit is issued; and any deficiency in such amount to be paid by said applicant when the permit is issued.

[Sec 3, Part III, title 1 of the sanitary code as amended Nov. 14, 1911.]

JACKSON, TENN.

MILK—PRODUCTION, CARE, AND SALE.

SECTION 1. No person, firm, or corporation shall produce for sale, sell, offer for sale, or have in his or their charge, custody, or control for sale or distribution within the city of Jackson any milk, cream, or buttermilk without first obtaining a permit from the board of health to conduct such business or distribution, under penalty as hereinafter provided.

SEC. 2. All persons, firms, corporations, or others offering for sale milk, cream, or buttermilk shall apply for and obtain from the board of health a permit for such purpose, and shall at all times keep such permit conspicuously displayed in their place of business.

SEC. 3. All permits for the sale of milk, cream, or buttermilk shall be renewed on or before the 20th day of January of each year, and for each milk permit thus issued the board of health shall collect before issuing such permit a fee of $1, acknowledgment of the receipt of which shall appear upon the face of said permit when issued.

All permits thus issued or renewed shall be good and in force until the 20th day of January next ensuing. Permits thus issued are not transferable by reason of sale or transfer of business nor is any of the said fee to be refunded by reason of cessation of sale of milk or of any of its products prior to termination of period for which said permit is issued.

All fees thus collected by the board of health for the issuance of such permits shall be paid monthly by the said board of health to the city recorder, and his receipt for same shall be a voucher for the payment of such to the city.

SEC. 4. All milk wagons or other vehicles used for the purpose of vending milk shall have painted thereon legibly the name of the owner in letters not less than 3 inches in height and shall have placed on each side of wagon or other vehicle used for the purpose of vending milk the license plate of the board of health.

SEC. 5. *Revoking of permit.*—If at any time after the granting of a permit as above provided, the holder fails to comply with the sanitary requirements of the board of health or repeatedly sells or offers for sale milk below standard or otherwise adulterated within the meaning of the ordinances of the city of Jackson or in violation of this ordinance or any of the provisions thereof, the board of health shall revoke his or their permit, with or without notice, and no liability shall attach to the city of Jackson or to any officer of the board of health by reason of such revocation nor shall the city be required to refund any money for the unexpired term of any such permit. The president of the board of health may grant the defendant a hearing if he deems this necessary.

SEC. 6. *Reissuing of revoked permit.*—If, after the revocation of a permit, the defendant complies with the requirements of the board of health and makes manifest his intention to meet them in the future, the president of the board of health may, at his discretion, recommend that the permit be reissued.

SEC. 7. *Publishing standing of dairymen and milk dealers.*—It shall be the duty of the board of health to publish from time to time in the daily newspapers of the city of Jackson the names, score condition of equipment, methods, sanitary condition, and such other data as they may think proper to inform the consuming public of the standing and efficiency of every dealer in milk in the city of Jackson.

SEC. 8. No person, firm, or corporation shall have for sale, sell, offer for sale, or have in his or their charge, custody, or control for sale or distribution within the city of Jackson any unwholesome, watered, or adulterated milk, or milk known as swill milk, or milk which has been transported or stored in an unclean manner, or milk which contains preservatives or coloring matter, or milk which is produced from cows which are kept or stabled under unhealthy conditions, or which may be diseased, or when drawn from animals three weeks before or after parturition.

SEC. 9. All milk sold or offered for sale in this city shall be the pure, unadulterated product of healthy milch cows, and all milk sold or offered for sale in this city shall contain not less than 3½ per cent of milk fats nor less than 12½ per cent of natural milk solids, viz, fat, casein, milk sugar, and ash, and not more than 87½ per cent of water, and the specific gravity at 60° F. shall not be lower than 1.029 or higher than 1.034. All milk which shall be below such standard shall be deemed and conclusively held to be impure and adulterated, and if any person shall sell or have for sale milk of a quality below the standard herein established, they shall, upon conviction thereof, be fined not less than $5 nor more than $25 for each offense, and upon a second conviction the board of health is hereby empowered to cancel permit held by person or persons thus convicted.

It is further provided that the foregoing shall not be construed to prohibit the sale of buttermilk or skim milk as such, but it is hereby provided that any person or persons selling or having for sale "skim milk" (milk deprived of all or a part of its cream) shall have the can or vessel containing the same labeled prominently and conspicuously, in plain letters not less than 3 inches in height, with the words "skim milk."

SEC. 10. Any person engaged in the sale of milk shall furnish forthwith, when requested to do so by the board of health or any officer or inspector thereof, a true statement in writing, upon blanks to be provided by the board of health, setting forth the locality from which the milk was procured, also a complete and full list of the persons from which said milk was purchased. Said written statement shall be signed by the person or persons selling the said milk.

SEC. 11. No milk, cream, or butter milk shall be sold or exposed for sale in the city of Jackson except from cows stabled under light, dry, and well-ventilated conditions, and in all other respects conforming to the requirements set forth in the following rules:

RULE 1. *Milk depots and dairies.*—By a "milk depot" is meant any place, house, or room where milk is received from the dairy or dairies, and includes all ice-cream factories, and prepared for distribution. By a "dairy" is meant any place where cattle are kept for the production of milk.

RULE 2. *Where to be established.*—No milk depot shall be established or maintained in a room or rooms which communicate directly with any living rooms, kitchen, toilet, laundry, or stable or places where animals are kept or slaughtered. No milk depot shall be maintained which communicates in any way with a horse or cow barn, and shall be separated therefrom by an air and odor proof partition or wall. The immediate vicinity of the milk depot, especially within 25 feet of the doors and windows thereof, shall be kept free from accumulations of rubbish, garbage, manure, and any other putrefying, decomposing, infectious, and bad-smelling substances.

No dairy shall be established or maintained in insanitary surroundings where it is designed to offer such milk to the citizens of Jackson. Insanitary conditions will be deemed to exist whenever and wherever properly constructed barns, milk rooms, and utensils are not provided; where the cattle are dirty, unhealthy, crowded, fed distillery waste, slop, or other food forbidden by the ordinances of the city of Jackson; where the utensils are not kept clean; where the premises are not kept clean; where the udders of all cows are not washed in clean water and dried with clean cloths prior to milking; where the attendants do not wash and put on a clean outer garment prior to milking; where the milk is not immediately removed from the barn to the milk room immediately after milking each cow, and there promptly cooled; where floors of impervious material are not provided in milk rooms and stables; where screens are not provided; and where the owner refuses to permit an inspection of his premises, or who refuses to cooperate with the board of health.

Rule 3. *Construction.*—The floors in dairies, stables, milk rooms, and milk depots shall be smooth, free from crevice and defects, and water-tight and constructed of some impervious material. The walls and ceilings shall be smooth, tight, and free from unnecessary projections, niches, etc., and kept well painted or whitewashed. The milk room shall be provided with glass windows, proper cooling tanks for the milk, smooth and tight walls and ceilings, and must be screened between April 1 and November 15 each year, as must be all milk depots.

Rule 4. *Ventilation.*—All milk depots and milk rooms shall be provided with adequate ventilation by means of windows, air shafts, air ducts, and other mechanical apparatus, if required, so as to insure free circulation of fresh air at all times.

Rule 5. *Refrigerator and ice boxes.*—The inner wall of the compartment of the refrigerator and ice boxes where milk is kept shall be smooth and metal, or porcelain lined. The milk department shall be kept clean and free from any odor. Nothing but milk and milk products shall be stored in the ice box. This applies to all groceries and meat markets handling milk, as well as to depots and dairies.

Rule 6. *Drying racks.*—Drying racks shall be provided on which bottles and cans can be placed in an inverted position for proper drainage.

Rule 7. *Pasteurizers and separators.*—Pasteurizers and separators shall be so constructed that all parts, including pipes, can be readily cleansed and sterilized. These appliances must be kept scrupulously clean, inside and out, at all times.

Rule 8. *Utensils.*—All shipping cans, bottles, dippers, skimmers, measures, strainers, stirrers, and other utensils must be so constructed that all parts are absolutely free from spaces where milk can accumulate or soak in, so that it can not be removed by simple washing. The surface coming in contact with milk, cream, or buttermilk must be smooth and free from excessive rust. All utensils must be kept scrupulously clean, inside and out, at all times. All utensils before use must be thoroughly sterilized by boiling water or live steam. Utensils must be kept in good repair and free from rough surfaces of any kind. When not in use, they shall be kept dry, inverted, and on racks or hooks where flies can not reach them. Bottle caps must be kept in clean, covered, dry, and dust-proof receptacles. .

Rule 9. *Maintenance and care.*—The floors shall be kept clean and scrubbed. The walls, ceiling, shelves, windows, and other surfaces must be clean and free from dust by washing or wiping with damp cloth. Unnecessary articles, such as boxes, old utensils, harness, lanterns, and other articles not required in the milk business shall not be kept in a milk depot or milk room, or in the cow stables.

Rule 10. *Attendants.*—Every person in charge of such milk depot or dairy shall keep himself and his employees in a clean condition and cleanly clothed while engaged in the bottling, pouring, or other handling of milk, including milking of the cows.

Rule 11. *Communicable diseases.*—No person with tuberculosis, any venereal disease, or any communicable disease shall work in any milk depot, dairy, or in any other place where milk or its products are handled. When typhoid fever, scarlet fever, diphtheria, smallpox, tuberculosis, measles, or chicken pox occur in the house or families of anyone engaged in the handling of milk it shall be the duty of the owner or manager to notify the board of health at once of this fact, so that the necessary regulations can be enforced, in cooperation with the board of health, to prevent the spread of the disease. No one afflicted with or convalescent from typhoid fever, scarlet fever, diphtheria, smallpox, measles, or any other communicable disease shall engage in the handling of milk, cream, or buttermilk, nor enter a depot or dairy during such period. When any of the above-enumerated or any other communicable diseases exist in the house or family of anyone engaged in the handling of milk, he shall at once discontinue his work in the milk depot, dairy, or on their vehicles. The depot, dairy, or wagon shall be declared infected if anyone with or convalescent from any of the above-enumerated diseases or any other communicable disease has worked therein or thereon, together with all milk, cream, or buttermilk with which any such party may have come in contact. No person convalescent from any communicable disease or living in any house or on any premises where any communicable disease exists shall reengage in the handling of milk unless the board of health has enforced suitable quarantine regulations and the necessary disinfection has been done under the supervision and direction of the board of health. No milk dealer or his or her employees shall take from a quarantined house any money, tickets, cans, containers, etc.

RULE 12. *Operation.*—All milk shall be stored at a temperature not above 50° F. Sour milk must not be allowed to stand in the dairyman's cans. Nothing except milk, cream, or buttermilk shall be permitted in the milk vats, ice boxes, and coolers Returned empty bottles and other utensils must be thoroughly cleansed and sterilized before being conveyed into the milk room.

Sec. 12. The board of health may through its duly authorized officers or inspectors visit, view, and inspect all vessels, cans, receptacles, refrigerators, buildings, platforms, establishments, or places of any kind containing milk or its products and examine the conditions thereof with reference to cleanliness and sanitation and cause the removal and abatement of any unfit, unclean, or injurious condition attending the keeping, storing or possession, care, custody or control of milk or its products at any and in all places; and said board of health through its authorized officers or inspectors shall have the right and power to enter and have full access to any building or premises where any milk or its products are stored or kept for sale, and to all wagons, railroads, cars, or vehicles used for the purpose of delivering milk or its products, and shall have the right to remove samples of such milk or its products therefrom for the purpose of inspecting, testing, or analyzing same.

SEC. 13. That any person or persons violating any of the sections of this ordinance or section or part thereof of the rules and regulations of the board of health, shall upon conviction be judged guilty of a misdemeanor, and shall be fined not less than $5 nor more than $25 for each offense.

SEC. 14. That all ordinances or parts of ordinances in conflict with this ordinance be, and the same are hereby, repealed.

SEC. 15. That this ordinance take effect from and after its passage, the welfare of the city requiring it.

[Ordinance passed Dec. 14, 1911.]

LOS ANGELES, CAL.

MILK—NO MILK TO BE SOLD OR OFFERED FOR SALE OR EXCHANGE EXCEPTING THAT COMING FROM COWS WHICH HAVE GIVEN A SATISFACTORY NEGATIVE TUBERCULIN TEST.

SECTION 1. It shall be unlawful for any person, firm, or corporation to bring or receive, or to cause or permit to be brought or received into the city of Los Angeles for sale, or to sell, exchange, or deliver, or to offer for sale, exchange, or delivery, or to cause or permit to be sold, exchanged, or delivered, or to be offered for sale, exchange, or delivery, or to have in possession for sale, exchange, or delivery any milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk, unless such milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk be obtained from cows that have given a satisfactory negative tuberculin test, as hereinafter provided: *Provided, however,* That the provisions of this section shall not apply to condensed or evaporated milk or condensed or evaporated skimmed milk which is sterilized and is contained in hermetically sealed packages labeled with the name of the article and with the name of the person, firm, or corporation by whom the same is prepared.

SEC. 2. Every cow or bull and all young stock shall be considered tubercular if following an injection of tuberculin any such cow, bull, or young stock shall exhibit a temperature, within 24 hours after such injection, of or exceeding 103.8° by the Fahrenheit thermometer, or which shall exhibit a temperature, within 24 hours after such injection, of or exceeding 2° by the Fahrneheit thermometer higher than the temperature of such cow, bull, or young stock recorded prior to the injection of such tuberculin. Said tuberculin test shall be made in accordance with the rules and regulations prescribed by the United States Bureau of Animal Industry.

SEC. 3. Until January 1, 1915, milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk obtained from cows which have not given a satisfactory negative tuberculin test, may be sold within the city of Los Angeles under the following conditions and not otherwise, to wit:

No milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk from cows which have not given a satisfactory negative tuberculin test, shall be sold or offered for sale, exchanged, given away, or delivered within the city of Los Angeles unless such milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk shall first have been pasteurized in a pasteurizer that is equipped with a self-regulating flowing device and self-recording thermometer, and unless all such milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk shall have exhibited a temperature of not less than 145° by the Fahrenheit thermometer, and shall have been maintained at such temperature for not less than 20 minutes.

Sec. 4. It shall be unlawful for any person, firm, or corporation to bring or receive, or to cause or permit to be brought or received, into the city of Los Angeles for sale, or to give away, sell, or offer for sale or to cause or permit to be sold or offered for sale, or to have in possession for sale, exchange, or delivery therein, any milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk obtained from any cows which have given a satisfactory negative tuberculin test which are permitted to associate or come in contact with any cattle which have exhibited a reaction to the tuberculin test, or to fail, neglect, or refuse to immediately separate and keep separated all cattle which have given a satisfactory negative tuberculin test from cattle which have exhibited a reaction to the tuberculin test.

It shall be unlawful for any such person, firm, or corporation to fail, neglect, or refuse to disinfect any premises where cattle which have exhibited a reaction to the tuberculin test have been kept or from which such cattle have been removed, in such manner and within such time as the health commissioner shall direct.

It shall be unlawful for any such person, firm, or corporation to handle the milk of any cow which has exhibited a reaction to the tuberculin test in any utensils used for the handling of milk of cows which have given a satisfactory negative tuberculin test.

Sec. 5. Every person, firm, or corporation supplying milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk to the city of Los Angeles, or any inhabitant thereof, produced from or by any dairy cattle owned or controlled by such person, firm, or corporation, shall, within 10 days after this ordinance becomes effective, make written application to the health commissioner for the tuberculin test to be applied to such dairy cattle. Such application shall be made annually and shall set forth the number and kind of dairy cattle in possession of or under the control of the applicant. On premises where tubercular cattle have been found and have been removed the remaining cattle shall be subjected to a retest within the period of six months from the time the last test was applied. Dairy cattle to which the tuberculin test has not been applied shall be kept separate from nonreacting dairy cattle until such cattle shall have given a satisfactory negative tuberculin test.

Sec. 6. The tuberculin test required to be made under the provisions of this ordinance shall be made under the direction of the health commissioner and shall be made free of charge.

Sec. 7. All dairy cattle found free from tuberculosis as determined by the tuberculin test shall be marked by placing a metal tag in the right ear; such tag shall bear the following inscription, L. A. T. T. No.——. All dairy cattle affected with tuberculosis as determined by a reaction to the tuberculin test shall be marked by punching out of the right ear the letter T, such letter to be not less than 1½ inches in height and 1½ inches in width, or by branding with a branding iron such letter T in the middle of the forehead.

Sec. 8. The health commissioner shall designate the time and place where herds of 10 dairy cattle or less shall be presented to have the tuberculin test applied.

Sec. 9. It shall be unlawful for any person other than the health commissioner or his regularly appointed assistants, deputies, or inspectors, or inspectors of the United States Bureau of Animal Industry, or the State veterinarian or his assistants, deputies, or inspectors to place, attach, or apply any tag or brand of the kind or character described in section 7 of this ordinance.

Sec 10. Nothing in this ordinance contained shall be deemed to prevent the health commissioner from applying the ophthalmo test in addition to the subcutaneous test.

Sec. 11. That any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable by a fine of not more than $500 or by imprisonment in the city jail for a period of not more than six months, or by both such fine and imprisonment.

Sec. 12. The city clerk shall certify to the passage of this ordinance and cause the same to be published once in the Los Angeles Daily Journal.

[Ordinance adopted Nov. 28, 1911.]

ORANGE, N. J.

MILK AND ICE CREAM—PRODUCTION, CARE, AND SALE.

2. No milk shall be sold, delivered, stored, or transported at a temperature exceeding 50° F.

3. Every license required under section 27 of the ordinance to which this ordinance is a supplement shall, when said license applies to the sale of milk from a store or booth, be plainly displayed at all times in or upon said store or booth.

4. No milk shall hereafter be sold or offered for sale or delivered within the city of Orange which shall be produced in dairies having a rating below 60 per cent, as based on the score card adopted by the board of health of the State of New Jersey, or which contains an excessive number of bacteria.

5. No person shall issue, circulate, or use milk tickets or coupons that have been previously used, and no person having custody of a milk can, bottle, or other vessel used as a container for milk intended for sale or distribution, shall place or permit to be placed therein any milk ticket or any other article or substances other than milk or its products or water or other agent used for cleansing such bottle, can, or vessel.

6. No cream shall be sold or offered for sale or delivered within the city of Orange unless it shall be produced and handled in accordance with the requirements set forth in the ordinances and regulations of this board in relation to the production and handling of milk.

7. No ice cream shall be manufactured, sold, or offered for sale in the city of Orange unless the milk and cream entering into the composition of the same shall comply with all requirements set forth in the ordinances and regulations of this board and of the board of health of the State of New Jersey.

[Ordinance, board of health, adopted Oct. 2, 1911, as a supplement to the sanitary and plumbing code adopted Dec. 1, 1900.]

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APRIL 6, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md		3	New Orleans, La	3	4
Boston, Mass	1	1	Newport, Ky	1	
Bridgeport, Conn		1	New York, N. Y	8	11
Chicago, Ill	2	1	Norristown, Pa		1
Cincinnati, Ohio	2		Oakland, Cal		1
Cleveland, Ohio		1	Oklahoma City, Okla	2	
Denver, Colo	1	1	Omaha, Nebr	5	3
Fall River, Mass	1	1	Philadelphia, Pa		1
Galveston, Tex	3	1	Racine, Wis		1
Haverhill, Mass	4		Roanoke, Va	3	2
Jacksonville, Fla	1	1	St. Louis, Mo	6	1
Kansas City, Kans	17		San Antonio, Tex	5	
Kansas City, Mo	24	26	Springfield, Ill		1
Lexington, Ky	1		Wilmington, Del		1
Malden, Mass		1	Worcester, Mass		1
Nashville, Tenn	12	1			

OKLAHOMA.

From December 1, 1911, to March 27, 1912, 415 cases of cerebrospinal meningitis with 159 deaths were reported in the State of Oklahoma. Of these 133 cases with 38 deaths were reported from February 29 to March 27. The cases were reported from 51 counties.

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 6, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md		2	Lynn, Mass		1
Camden, N. J	1		Montclair, N. J	2	
Cincinnati, Ohio	1		New York, N. Y	30	13
Cleveland, Ohio	6		Norristown, N. J	1	
Cumberland, Md	1		Philadelphia, Pa	15	
Haverhill, Mass	1		Providence, R. I		1
Jersey City, N. J		1	Reading, Pa	1	
Kalamazoo, Mich	1		Saginaw, Mich	1	1
Los Angeles, Cal	4	1	St. Louis, Mo	14	3

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 2,998 acres of land in Alameda County were covered with poison during the week ended April 6, 1912.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Total collected.	Found dead.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Apr. 6, 1912	[1] 139	8	96	
Oakland	do	[2] 738	22	544	
San Francisco	do	[3] 1,803	20	1,395	
Washington:					
City—					
Seattle	do	1,094		1,064	

[1] Identified: Mus norvegicus, 104; Mus musculus, 35.

[2] Identified: Mus norvegicus, 566; Mus musculus, 172.

[3] Identified: Mus norvegicus, 778; Mus rattus, 307; Mus alexandrinus, 313; Mus musculus, 405.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended April 6, 1912, 326 ground squirrels from Alameda County, Cal., were examined for plague infection. No plague-infected squirrel was found.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APRIL 6, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Altoona, Pa		2	Montgomery, Ala		1
Ann Arbor, Mich	3		Nashville, Tenn		7
Auburn, N. Y	4	2	Newark, N. J		5
Baltimore, Md		24	New Bedford, Mass		6
Berkeley, Cal		1	New Castle, Pa	1	
Binghampton, N. Y	10	3	New Orleans, La		5
Boston, Mass		38	Newton, Mass		3
Bridgeport, Conn		7	New York, N. Y		137
Cambridge, Mass		3	Niagara Falls, N. Y		3
Chelsea, Mass		1	Norristown, Pa		2
Chicopee, Mass		2	Northampton, Mass		1
Chicago, Ill	41	147	Oakland, Cal		3
Cincinnati, Ohio		12	Oklahoma, Okla		2
Cleveland, Ohio	27	7	Omaha, Nebr		6
Cumberland, Md		1	Passaic, N. J		4
Danville, Ill		2	Pawtucket, R. I		4
Dayton, Ohio		4	Philadelphia, Pa	39	53
Duluth, Minn		1	Pittsfield, Mass		3
Dunkirk, N. Y	1	1	Pottstown, Pa		3
East Orange, N. J		3	Providence, R. I		8
Elmira, N. Y		2	Racine, Wis		2
El Paso, Tex		6	Reading, Pa	1	1
Evansville, Ind		3	Roanoke, Va		2
Everett, Mass		2	Rockford, Ill		1
Fall River, Mass		9	Saginaw, Mich	2	
Grand Rapids, Mich	2	3	Salem, Mass		1
Harrisburg, Pa	4		San Antonio, Tex		7
Hartford, Conn		7	San Diego, Cal	1	1
Haverhill, Mass	8		Saratoga Springs, N. Y	3	
Homestead, Pa	2	2	Schenectady, N. Y	11	4
Kalamazoo, Mich	2	2	South Bend, Ind		5
Kansas City, Kans	14	14	South Bethlehem, Pa	1	
Knoxville, Tenn		1	Spokane, Wash		1
La Fayette, Ind		2	Springfield, Ill		4
Lancaster, Pa	1		Springfield, Mass		9
Lawrence, Mass		4	Taunton, Mass		2
Los Angeles, Cal	1	9	Toledo, Ohio		5
Lowell, Mass		2	Washington, D. C		19
Lynchburg, Va		1	Wheeling, W. Va		4
Lynn, Mass		3	Wilkes-Barre, Pa	4	4
Manchester, N. H	7	7	Wilkinsburg, Pa	1	
Marinette, Wis		3	Wilmington, Del		5
Medford, Mass		2	Wilmington, N. C	5	3
Moline, Ill		1	Zanesville, Ohio		2
Montclair, N. J		1			

POLIOMYELITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APRIL 6, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass		1	Los Angeles, Cal		1
Lancaster, Pa	1		Lowell, Mass	1	
Logansport, Ind		1	New York, N. Y	2	1

TETANUS.

During the week ended April 6, 1912, tetanus was reported as follows: Chicago, Ill., 1 death; New York, N. Y., 2 deaths; Philadelphia, Pa., 1 case.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED APR. 26, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
District of Columbia	Apr. 7-13	1		
Florida:				
Counties—				
Alachua	Apr. 1-6	2		
Duval	do	5		
Escambia	do	1		
Hernando	do	2		
Hillsboro	do	1		
Polk	do	7		
Putnam	do	4		
Total for State		22		
Kansas:				
Counties—				
Allen	Feb. 1-29	2		
Cloud	do	1		
Coffey	do	2		
Cowley	do	1		
Crawford	do	4		
Ford	do	1		
Lyon	do	4		
Reno	do	1		
Woodson	do	1		
Wyandotte	do	3		
Total for State		20		
*Louisiana:				
New Orleans	Apr. 4-11	12		
Montana:				
Counties—				
Cascade	Mar. 1-31	1		
Chouteau	do	2		
Fergus	do	3		
Hill	do	1		
Lewis and Clark	do	1		
Lincoln	do	4		
Missoula	do	1		
Silverbow	do	1		
Teton	do	3		
Total for State		17		
New Jersey	Mar. 1-31			No case
Oklahoma:				
Counties—				
Bryan	Feb. 1-29	1		
Delaware	do	20		
Le Flore	do	1		
Logan	do	5		
Muskogee	do	3		
Osage	do	30		
Pittsburg	do	1		
Sequoyah	do	1		
Tulsa	do	2		
Total for State		64		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended Apr. 26, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
South Dakota:				
Counties—				
Brown	Mar. 1-31	30		
Charles Mix	do	2		
Clay	do	2		
Corson	do	1		
Custer	do	25		
Edmunds	do	2		
Lincoln	do	3		
McCook	do	2		
Marshall	do	1		
Moody	do	1		
Pennington	do	1	1	
Roberts	do	1		
Spink	do	17		
Walworth	do	1		
Yankton	do	1		
Total for State		90	1	
Grand total for the United States		226	1	

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED APR. 6, 1912.

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	201	11	1	19	....	13	....	....	....	44	29	11	2
Boston, Mass	670,585	236	22	2	150	2	29	1	....	....	68	17	8	....
Chicago, Ill	2,185,283	....	117	21	142	2	225	17	....	....	147	106	12	1
Cleveland, Ohio	560,663	151	16	5	62	1	35	1	....	....	21	11	4	1
New York, N. Y	4,766,883	1,691	298	30	1,879	33	501	22	1	....	409	208	31	3
Philadelphia, Pa	1,549,008	482	40	8	30	....	75	3	....	....	83	66	15	3
St. Louis, Mo	687,029	250	25	2	53	....	20	2	....	....	42	22	4	1
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	142	9	1	62	....	23	1	....	....	12	14	2	1
Cincinnati, Ohio	364,463	135	8	....	16	....	23	....	....	....	25	21	....	1
Detroit, Mich	465,766	188	19	3	....	....	46	1	2	....	....	....	....	....
Los Angeles, Cal	319,198	116	13	1	....	....	6	1	1	....	9	15	....	....
Milwaukee, Wis	373,857	125	8	3	97	2	35	4	....	....	20	10	7	....
Newark, N. J	347,469	93	20	2	27	2	12	....	....	....	31	13	....	1
New Orleans, La	339,075	115	6	1	1	....	16	....	19	....	43	18	3	....
San Franciso, Cal	416,912	135	2	....	60	4	9	....	1	....	17	6	2	....
Washington, D. C	331,069	147	4	....	46	....	2	....	....	....	38	19	7	2
Cities having from 200,000 to 300,000 inhabiatnts.														
Denver, Colo	213,381	58	7	1	....	....	6	....	3	....	....	11	....	....
Jersey City, N. J	267,779	84	....	2	....	....	....	....	....	....	....	16	....	....
Kansas City, Mo	248,381	49	11	2	4	....	6	....	....	....	2	7	2	....
Providence, R. I	224,326	73	12	2	18	3	12	....	....	....	5	7	1	1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Apr. 6, 1912—Continued.

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport Conn	102,054	27	....	1	2	....	4	1	....	....	3	....	....	....
Cambridge, Mass	104,839	22	4	....	80	....	7	....	....	....	7	1	....	....
Dayton, Ohio	116,577	28	....	....	17	....	....	....	12	....	....	3	....	....
Fall River, Mass	119,295	41	2	....	....	....	....	....	....	....	5	3	....	....
Grand Rapids, Mich	112,571	34	3	1	5	....	5	....	....	....	6	5	7	....
Lowell, Mass	106,294	39	1	....	15	....	2	....	....	....	4	7	....	1
Nashville, Tenn	110,364	36	....	....	1	....	....	....	....	....	3	3	3	2
Oakland, Cal	150,174	45	1	....	8	....	1	....	1	....	4	7	2	....
Omaha, Nebr	124,096	25	1	....	3	....	1	....	1	....	1	1	....	....
Richmond, Va	127,628	56	4	....	88	....	1	....	....	....	14	4	....	....
Spokane, Wash	104,402	....	....	....	79	....	7	....	7	....	....	....	1	....
Toledo, Ohio	168,497	76	3	1	40	2	4	....	....	....	....	5	....	1
Worcester, Mass	145,986	45	3	....	9	....	14	....	....	....	9	8	....	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	12	1	....	....	1	1	1	....	....	1	....	....	....
Bayonne, N. J	55,545	17	5	....	8	....	9	1	....	....	1	....	....	....
Brockton, Mass	56,878	15	1	....	26	....	7	....	....	....	2	....	....	....
Camden, N. J	94,538	....	5	....	....	....	3	....	....	....	9	....	....	....
Duluth, Minn	78,466	21	....	....	....	....	6	....	....	....	6	10	....	1
Evansville, Ind	69,647	20	2	....	....	....	....	....	....	....	....	2	1	....
Fort Wayne, Ind	63,933	8	3	....	10	....	1	....	....	....	2	1	....	....
Harrisburg, Pa	64,186	23	1	....	195	....	1	....	1	....	3	3	1	....
Hartford, Conn	98,915	33	5	1	20	....	7	1	....	1	....	6	....	....
Hoboken, N. J	70,324	10	2	....	2	....	1	....	....	....	4	....	....	....
Jacksonville, Fla	57,699	....	3	....	10	....	....	....	5	....	2	3	....	....
Johnstown, Pa	55,482	16	2	....	1	....	....	....	....	....	....	1	....	....
Kansas City, Kans	82,331	....	4	....	3	....	5	....	....	....	....	....	1	....
Lawrence, Mass	85,892	23	....	....	1	....	2	....	....	....	2	2	3	....
Lynn, Mass	89,336	31	4	....	1	....	8	1	....	....	5	3	....	....
Manchester, N. H	70,063	24	1	....	5	....	1	....	....	....	....	....	....	....
New Bedford, Mass	96,652	....	2	....	14	....	3	....	....	....	4	4	....	....
Oklahoma City, Okla	64,205	15	....	....	....	....	....	....	....	....	....	1	1	....
Passaic, N. J	54,773	19	5	....	34	1	1	1	....	....	....	1	1	....
Pawtucket, R. I	51,622	6	....	....	....	....	....	1	....	....	....	1	....	....
Portland, Me	58,571	23	2	....	1	....	3	....	....	....	....	....	....	....
Reading, Pa	96,071	31	2	....	2	....	2	....	....	....	1	3	....	....
Saginaw, Mich	50,510	6	4	....	....	....	2	....	....	....	4	5	3	....
San Antonio, Tex	96,614	37	5	....	4	....	4	1	4	....	....	7	....	....
Schenectady, N. Y	72,826	14	2	....	62	....	3	....	....	....	8	1	....	....
South Bend, Ind	53,684	20	....	....	....	....	....	....	....	....	....	....	2	1
Springfield, Ill	51,678	26	1	....	....	....	....	....	1	....	....	2	....	....
Springfield, Mass	88,926	26	....	....	11	....	....	1	....	....	1	....	....	....
Trenton, N. J	96,815	33	2	....	1	....	....	....	....	....	9	4	....	....
Wilkes-Barre, Pa	67,105	27	1	....	6	....	3	....	....	....	1	2	....	....
Wilmington, Del	87,411	28	....	....	....	....	....	....	....	....	....	3	....	....
Yonkers, N. Y	79,803	14	7	....	1	....	11	....	....	....	7	3	1	....
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	9	4	....	....	....	3	....	....	....	....	....	2	....
Auburn, N. Y	34,668	12	....	....	....	....	....	....	....	....	1	1	....	....
Aurora, Ill	29,807	7	1	....	....	....	....	....	....	....	....	1	....	....
Berkeley, Cal	40,434	....	....	....	23	....	....	....	....	....	....	1	....	....
Binghamton, N. Y	48,443	17	1	....	2	....	5	....	....	....	....	2	2	....
Brookline, Mass	27,792	5	....	....	1	....	1	....	....	....	3	....	....	....
Chelsea, Mass	32,452	9	....	....	19	....	1	....	....	....	6	1	2	....
Chicopee, Mass	25,401	11	....	....	1	....	2	....	....	....	....	1	....	....
Danville, Ill	27,871	7	1	....	1	....	1	....	....	....	....	1	....	....
East Orange, N. J	34,371	12	....	....	7	....	6	....	....	....	3	1	....	....
Elmira, N. Y	37,176	14	1	....	3	....	....	....	....	....	12	2	....	....
El Paso, Tex	39,279	30	1	1	....	....	2	....	....	1	....	4	1	....
Everett, Mass	33,484	8	2	....	12	....	1	....	....	....	3	....	....	....
Fitchburg, Mass	37,826	15	1	1	....	....	....	....	....	....	....	1	1	....
Haverhill, Mass	44,115	17	....	....	11	....	4	....	....	....	3	....	1	....
Kalamazoo, Mich	39,437	9	....	....	2	....	3	....	....	....	....	....	....	....
Knoxville, Tenn	36,346	15	....	....	11	....	....	....	1	....	....	3	....	....
La Crosse, Wis	30,417	....	1	....	....	....	....	....	....	....	....	....	....	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Apr. 6, 1912—Continued

Cities.	Population United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants—Continued.														
Lancaster, Pa	47,227		1		117		2				4			
Lexington, Ky	35,099	19	1				1					1		
Lima, Ohio	30,508	7	3		1		1							
Lynchburg, Va	29,494	5	1		44		1						1	
Malden, Mass	44,404	6	1		12		2							
Montgomery, Ala	38,136	13	1		4				2		1	1		
Mount Vernon, N. Y	30,919		10		31		8				1			
Newcastle, Pa	36,280		3								7		3	
Newport, Ky	30,309	12					7				3	8		
Newton, Mass	39,806	8			37		2							
Niagara Falls, N. Y	30,445	16					2				1	1		1
Norristown, Pa	27,875	10	5		13							2		
Orange, N. J	29,630	5	1		2						1	1	1	
Pittsfield, Mass	32,121	7	2		2						1		1	
Portsmouth, Va	33,190	10							8					
Racine, Wis	38,002	11	2	1,			4					1		
Roanoke, Va	34,874	14	2		31						22	6		
Rockford, Ill	45,401	12					5					1	19	2
Salem, Mass	43,697	12										1		
San Diego, Cal	39,578	5			3		1				4	4		
Superior, Wis	40,384	3										1	3	
Taunton, Mass	34,259	18			1						3	2		
Waltham, Mass	27,834	4			33		1							
West Hoboken, N. J	35,403	8	2				4					1		
Wheeling, W. Va	41,641	21			3						1	3	3	
Williamsport, Pa	31,860	7			8									
Wilmington, N. C	25,748	9	1		6		3		2					
York, Pa	44,750						1				4		1	
Zanesville, Ohio	28,026	13	1	1			2				17	1		
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	6			3		1							
Beaver Falls, Pa	12,191	1	1	1									1	
Bennington, Vt		4			1						3	2		
Cambridge, Mass	11,327	2			1									
Carbondale, Pa	17,040	8			13									
Clinton, Mass	13,075	6										1		
Coffeyville, Kans	12,687		1								1			
Columbus, Ga	20,554	5							3					
Concord, N. H	21,497	10	1		9									
Cumberland, Md	21,839	9			10						1	1	2	
Dunkirk, N. Y		8										2		
Galesburg, Ill	20,089	9										1		
Harrison, N. J	14,498	2					1				1			
Homestead, Pa	18,713	9			1							1		
Kearny, N. J	18,659	6	2		6		1							
La Fayette, Ind	20,081	7										2		
Logansport, Ind	19,050	4										1	10	1
Marinette, Wis	14,610	5					1							
Marlboro, Mass	14,577	2	1				1							
Massillon, Ohio		2			2									
Medford, Mass	23,156	6	3		12									
Melrose, Mass	15,715	5			28		2				2	1		
Moline, Ill	24,199	7										1		
Montclair, N. J	21,150	8			9						4	1		
Morristown, N. J	12,507	3										1		
Nanticoke, Pa	18,507	7	1											
Newburyport, Mass	19,240	5									1			
North Adams, Mass	22,012	4			4						3	2		
Northampton, Mass	19,431	9									1			
Palmer, Mass		1												
Pottstown, Pa		9					1					1		
Saratoga Springs, N. Y		3	1				1				1			
South Bethlehem, Pa	19.973	8			10						6	1		
Steelton, Pa	14,246	6	3	1							1			
Tiffin, Ohio	11,894						1					1	2	
Wilkinsburg, Pa	18,924	6					1				1			
Woburn, Mass	15,308	3	1		7									

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated.)

CONNECTICUT.—Month of March, 1912. Population of reporting towns, 1,126,694. Total number of deaths from all causes 1,663, including diphtheria 14, measles 18, scarlet fever 13, tuberculosis (pulmonary) 124, typhoid fever 9. Cases reported: Diphtheria 156 in 41 towns, measles 1,144 in 64 towns, scarlet fever 228 in 52 towns, smallpox 68 in 3 towns, tuberculosis (pulmonary) 131 in 46 towns, typhoid fever 24 in 14 towns.

FLORIDA.—Week ended April 6, 1912. Reports received from the State board of health show diphtheria present in 3 localities with 5 cases, malaria in 4 localities with 17 cases, smallpox in 7 counties with 22 cases, tuberculosis in 9 localities with 21 cases, typhoid fever in 2 localities with 6 cases.

KANSAS.—Month of February, 1912. Population 1,690,949. Total number of deaths from all causes not reported. The deaths include diphtheria 7, measles 2, scarlet fever 9, typhoid fever 2. Cases reported: Diphtheria 106, measles 434, scarlet fever 248, smallpox 20, typhoid fever 40.

MASSACHUSETTS.—Week ended February 3, 1912. Population of reporting towns 2,593,485. Total number of deaths from all causes 865, including diphtheria 12, measles 4, scarlet fever 1, tuberculosis 72, typhoid fever 2. Cases reported: Diphtheria 144, measles 624, scarlet fever 154, smallpox 9, tuberculosis 163, typhoid fever 18.

Week ended February 10, 1912. Total number of deaths from all causes 851, including diphtheria 11, measles 7, scarlet fever 2, tuberculosis 70, typhoid fever 1. Cases reported: Diphtheria 131, measles 574, scarlet fever 149, smallpox 3, tuberculosis 24, typhoid fever 24.

Week ended February 17, 1912. Total number of deaths from all causes 894, including diphtheria 8, measles 12, scarlet fever 8, tuberculosis 96, typhoid fever 4. Cases reported: Diphtheria 116, measles 491, scarlet fever 140, smallpox 2, tuberculosis 183, typhoid fever 16.

Week ended February 24, 1912. Total number of deaths from all causes 895, including diphtheria 7, measles 3, scarlet fever 5, tuberculosis 60, typhoid fever 2. Cases reported: Diphtheria 128, measles 559, scarlet fever 123, tuberculosis 151, typhoid fever 20.

FOREIGN AND INSULAR.

CHINA.

Chaochowfu—Plague.

Consul Williams at Swatow reports March 16 the presence of plague at Chaochowfu, the principal city in the Swatow consular district.

Hongkong—Plague—Smallpox—Plague-infected Rats.

Surg. Brown reports: During the week ended March 9, 1912, 12 cases of plague with 12 deaths and 55 cases of smallpox with 43 deaths were reported in Hongkong.

During the same period 1,903 rats were examined for plague infection. Two plague-infected rats were found.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911; a fatal case February 9, 1912; and 2 fatal cases February 25, 1912.

The last plague-infected rats reported found at Honokaa were 49, found during the week ended March 2, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-prevention Work.

Chief Quarantine Officer Trotter reports:

Week ended Mar. 30, 1912.

Total rats and mongoose taken	450
Rats trapped	441
Mongoose trapped	9
Rats examined bacteriologically	398
Classification of rats trapped:	
Mus alexandrianus	42
Mus musculus	85
Mus norvegicus	21
Mus rattus	293
Average number of traps set daily	1,720

Mosquito-Eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy, who is detailed as sanitary adviser to the governor of the Territory of Hawaii:

Mosquito-eradication measures conducted at Honolulu from Mar. 25 to 30, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Ordered cleaned.	Oiled.	Drained.	Emptied.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.
Gutters, house	680	7	49					8		
Gutters, street	311	32		77						
Standing water	394	32		70	14					
Cesspools	975	43		71				26		
Privy vaults	1,432	24		35				16		
Holes and low places	662	169		196	4		79			5
Catch basins	425	39		145						
Leaky fixtures	49	1						35		
Water-holding plants	149	5	5							
Swamps	137	11	7	2						2
Ponds	64	1		1						
Troughs and tanks	335	18		1		30				3
Tubs or other receptacles	1,086	142	1	11		451				
Tin cans, bottles	1,536	118				766				
Water barrels	859	41	25			61			115	30
Vacant houses	223									

Number of loads of tin cans collected	32
Number of rice plantations inspected	15

Summary of Reports, November, 1911-March, 1912.

Inspections of—	Total inspections.	Wigglers found in.
Gutters, house	30,591	1,074
Gutters, street	4,146	399
Standing water	13,181	2,031
Cesspools	14,306	681
Privy vaults	18,472	456
Holes and low places	11,824	1,898
Catch basins	7,997	373
Leaky fixtures	3,432	44
Water-holding plants	30,928	1,641
Swamps	1,336	249
Ponds	708	104
Troughs and tanks	4,055	394
Tubs or other receptacles	10,939	1,208
Tin cans, bottles	259,824	2,967
Water barrels	7,305	1,268
Vacant houses	1,089	84
Yards	2,700	50
Grease traps	863	2
Washhouses	129	5
Holes in trees	10,771	166
Rice plantations	54	54

Loads of tin cans collected	224
Legal notices to abate nuisances served	616
Nuisances abated	525
Swamp land drained ... acres	30
Ditches dug ... miles (estimated)	20

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended March 9 1912, 92 deaths from cholera and 90 from plague were reported at Calcutta; in all Bengal, 3,876 cases of plague; in all India, 19,145 cases of plague, with 16,608 deaths.

ITALY.

Examination of Emigrants.

Passed Asst. Surg. Robinson reports:

Vessels inspected at Naples, Messina, and Palermo, week ended March 30:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected
Mar. 24	Saxonia	New York			
26	San Giorgio	do			
27	Oceania	Philadelphia	1,287	120	1,650
29	San Giorgio	New York	767	60	980
30	Venezia	do	845	110	1,550
30	Cedric	do	1,554	190	1,870
	Total		4,453	480	6,050

MESSINA.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected
Mar. 27	San Giorgio	New York	122	58	123
28	Borneo	do			
28	Cincinnati	do			
	Total		122	58	123

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected
Mar. 27	Columbia	New York			
28	Oceania	do	523	500	400
28	San Giorgio	do	384	400	300
29	Cincinnati	do			
30	Moncenisio	New Orleans			
	Total		907	900	700

JAPAN.

Plague in Formosa.

Consul Reat reports the occurrence of 13 cases of plague with 7 deaths in the island of Formosa during the week ended March 16.

From January to May, 1911, 246 cases of plague with 205 deaths were reported in Formosa.

JAVA.

Batavia—Typhus Fever.

Consul Rairden reports the occurrence of three cases of typhus fever with 2 deaths during the two weeks ended March 2, 1912.

SOUTH AFRICA.

Durban—Plague—Rat Infection.

The following information was received from the department of the interior at Pretoria: During the week ended March 15, 6 cases of plague with 4 deaths were reported at Durban, and during the week ended March 22, 3 cases with 4 deaths. The total number of cases reported to March 22 was 23 with 18 deaths. New foci of rat infection have been discovered.

VENEZUELA.

Caracas—Plague.

Information received from the American minister shows plague present at Caracas April 22.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING THE WEEK ENDED APR. 26, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India				Year 1911: Deaths, 323,237.[1]
Calcutta	Feb. 25-Mar. 2		85	
Madras	Mar. 10-16	1	1	
Rangoon	Jan. 1-31	18	18	

YELLOW FEVER.

Brazil:				
Ceara	Feb. 1-29		4	

PLAGUE.

Brazil:				
Para	Mar. 24-30	1		
Chile:				
Iquique	Mar. 10-16	2	1	
China:				
Chaochowfu	do			Present.
Hongkong	Mar. 3-9	12	12	
India:				
Bombay	Mar. 10-16	76	65	
Calcutta	Feb. 22-Mar. 2		69	
Rangoon	Jan. 1-31	30	24	
Japan:				
Formosa	Mar. 7-16	13	7	
Persia:				
Bushire	Feb. 25-Mar. 2	12	9	
South Africa:				
Durban	Mar. 15-22	3	4	
Straits Settlements:				
Singapore	Feb. 18-24	1	1	
Turkey in Asia:				
Basra	Feb. 13	1	1	A stoker on a vessel from Bushire.
Jiddah	Feb. 5-Mar. 13	3	4	
Venezuela:				
Caracas	Apr. 22			Present.

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[1] Bulletin Quarantenaire d'Egypte, Mar. 14, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended Apr. 26, 1912.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Galicia	Mar. 17-26	6		
Brazil:				
Para	Mar. 24-30	1	1	From Alagoas.
Canada:				
Montreal	Apr. 6-13	2		
Quebec	Apr. 7-13	8		
Chile:				
Iquique	Mar. 10-16	1	1	
China:				
Dalny	Mar. 1-23	3	2	
Hongkong	Mar. 3-9	55	43	
Egypt:				
Cairo	Mar. 4-11	1		
Germany	Mar. 4-Apr. 6	26		
Great Britain:				
London	Mar. 24-30	2		
India:				
Bombay	Mar. 10-16	80	46	
Calcutta	Feb. 22-Mar. 2		2	
Karachi	Mar. 10-16	78	69	
Rangoon	Jan. 1-31	42	10	
Italy:				
Leghorn	Mar. 24-30	1		
Madras	Mar. 10-16	12	2	
Naples	Mar. 24-30	3		
Japan:				
Formosa	Mar. 3-16	3		
Nogahama	Mar. 17-23	1		On s. s. Tenyo Maru from Hongkong.
Philippine Islands				Third quarter, 1911: Manila, 9 cases and no deaths.
Portugal:				
Lisbon	Mar. 14-20	3		
Russia:				
Moscow	Mar. 9-16	1	2	
Odessa	Mar. 19-23	7		
St. Petersburg	Mar. 17-23	11	7	
Warsaw	Feb. 11-17	19	4	
Spain:				
Valencia	Mar. 24-30	44	2	
Straits Settlements:				
Singapore	Feb. 18-Mar. 2	6	1	
Teneriffe:				
Santa Cruz	Mar. 24-30		4	
Turkey in Asia:				
Beirut	Mar. 17-23	20	5	

REPORTS RECEIVED FROM DEC. 30, 1911, TO APR. 19, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 19, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, vol. 1.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India:				
Bassein	Jan. 14-Feb. 24	109	90	
Calcutta	Nov. 5-Feb. 24		688	
Madras	Nov. 26-Mar. 7	540	438	Madras Presidency, Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-Feb. 29: Cases, 18,267; deaths, 11,563.
Moulmine	Feb. 18-24	2	2	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Dec. 31	62	52	
Indo-China:				
Saigon	Nov. 20-Mar. 4	1,520	1,066	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Provinces—				
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands				Third quarter, 1911: Manila, 1 fatal case; Provinces, 27 cases and 22 deaths.
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Jan. 27		755	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2-Mar. 20	21	5	
Aleppo	Jan. 26-Mar. 9	36	23	
Amara	Oct 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 19, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia—Continued.				
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14-26	29		
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Bahia	Mar. 23			Present.
Ceara	Jan. 1-Feb. 29		5	
Manaos	Nov. 19-Mar. 23		49	
Para	Dec. 9-16	1	1	
Pernambuco	Jan. 1-Feb. 15		10	
Canal Zone:				
Culebra Island quarantine	Jan. 1-31	1		From a vessel from Guayaquil.
Chile:				
Tocopilla	Apr. 11	38	12	
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Feb. 29	13	6	
Guayaquil	Nov. 16-Feb. 29	118	54	
Huigra	Feb. 1-29			1 case.
Milagro	do	16	7	
Naranjito	do	2	2	
Yaguachi	do			1 case.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb. 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida	Nov. 12-Mar. 23	20	9	Total Aug. 1-Mar. 23: Cases, 65; deaths, 29.
Puerto Mexico (Coatzocoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Feb. 15	30	13	
Macuto	Mar. 16-19	1	1	
Maiquetia	Feb. 24-Mar. 9	3	1	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Azores:				
Fayal	Jan. 10			Still present.
Terceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Feb. 17	18	12	
Pernambuco	Oct. 1-Feb. 15		8	
Rio de Janeiro	Nov. 12-Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 19, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Chile:				
Iquique	Nov. 12–Mar. 27	12	6	
Pisagua	Nov. 1–30	8		
China:				
Amoy	Jan. 13		1	
Hongkong	Dec. 9–Mar. 2	38	32	
Dutch East Indies:				
Java				Total Mar. 1–Dec. 30: Cases, 1,817; deaths, 1,324.
Pasoeroean Residency, Malang District.	Nov. 12–Mar. 2	104	61	
Soerobaya	Oct. 17–27	2		
Ecuador:				
Duran	Feb. 1–29	1		
Guayaquil	Nov. 16–Feb. 29	124	52	Dec. 16–Jan. 31: Reports not available because of revolution.
Egypt				Total Jan. 1–Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1–Mar. 15	45	30	Sept. 11–16: Cases, 50; deaths, 28.
Assouan	Jan. 1–Mar. 17	27	16	
Behera	Jan. 1–25	3	2	Sept. 11–16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16–Mar. 14	17	7	
Fayoum	Jan. 1–26	1		
Galioubeh	Jan. 1–Mar. 10	4	3	Oct. 5–Dec. 26: Cases, 1.
Garbieh	Jan. 1–Mar. 4	15	6	
Girgeh	Feb. 28	1	1	
Kena	Jan. 1–Mar. 7	26	17	Nov. 20–Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2–Mar. 7	3	1	
Minieh	Jan. 1–Mar. 15	13	3	Dec. 13: Cases, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13–15	1	1	From the interior via Bergamogo.
Hawaii:				
Honakaa	Feb. 9–Mar. 18	4	4	
India:				
Bombay	Nov. 19–Mar. 9	256	228	
Calcutta	Nov. 11–Feb. 17		224	
Karachi	Nov. 26–Mar. 9	322	268	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1–6	1	1	
Rangoon	Oct. 1–Dec. 31	50	50	
Bombay Presidency and Sind.	Oct. 29–Feb. 24	53,979	39,376	
Madras Presidency	do	9,171	7,166	
Bengal	do	22,567	18,954	
United Provinces	do	54,172	48,434	
Punjab	do	4,890	3,758	
Burma	do	1,042	939	
Eastern Bengal and Assam.	Jan. 1–Feb. 24	2	2	
Central Provinces	Oct. 29–Feb. 24	18,383	14,620	
Coorg	do	88	52	
Mysore State	do	8,162	6,309	
Hyderabad State	do	23,295	21.218	
Central India	do	7,496	6,187	
Rajputana and Ajmere Merwara.	do	950	772	
Kashmir	Feb. 3–23	38	19	
North West Province	Oct. 29–Feb. 24	2	2	Total for India, Oct. 29–Feb. 24: Cases, 204,237; deaths, [illegible]. Total year 1911: Cases, [illegible]; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13–Mar. 4	33	5	
Mauritius	Nov. 3–Mar. 8	64	34	
Persia:				
Buchir	Feb. 4–24	19	5	
Peru:				
Departments—				
Callao	Oct. 1–21	1		City, in November, 1 case; in January, 3 cases with 2 deaths Mar. 1–26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Mar. 13, 30 cases in the lazaretto at Trujillo.
Lima	do	13	6	
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 19, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Jan. 27		3	
South Africa:				
Durban	Jan. 14-Mar. 22			Total: Cases 23, deaths 18.
Straits Settlements:				
Singapore	Nov. 5-Feb. 10	26	23	
Turkey in Asia:				
Jiddah	Jan. 13-Feb. 2	6	1	
Venezuela:				
Caracas	Mar. 12	1		
West Indies:				
Trinidad	Apr. 2-13	4		
At sea	Mar. 1-11	1	1	On s. s. Macedonia from Bombay to Aden.

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Mar. 24	17	8	And vicinity.
Argentina:				
Buenos Aires	Jan. 1-31		2	Oct. 1-31, 6 deaths. No deaths in Nov. or Dec., 1911.
Rosario	Oct. 1-Jan. 31		40	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	2		
Budapest	Jan. 4-10	25		
Galicia	Dec. 24-Mar. 16	5	1	
Krain	Jan. 14-20	7		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-Mar. 9	3		
Brazil:				
Bahia	July 1-31		1	
Pernambuco	Oct. 1-Feb. 15		635	
Rio de Janeiro	Nov. 26-Feb. 24	18	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 16	5		
Nelson	Dec. 24-30	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-Apr. 6	2		
Nova Scotia—				
Halifax	Mar. 24-Apr. 6	2		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Mar. 23	91		
Sarnia	Oct. 17-Mar. 23	43		
Toronto	Jan. 6-Mar. 24	3	1	
Windsor	Feb. 4-Mar. 16	8		
Quebec—				
Montreal	Dec. 17-Mar. 16	22		
Quebec	Dec. 10-Mar. 30	262	2	
Ceylon:				
Colombo	Nov. 12-Feb. 10	3		And vicinity.
Chile:				
Iquique	Dec. 10-Jan. 20	3	1	
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Mar. 9	68		Feb. 17—Decreasing.
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chenghai	Jan. 29-Mar. 16			Present.
Chungking	Nov. 18-Mar. 2			Do.
Dalny	Mar. 3-9	6		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 19, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China—Continued.				
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-Mar. 2	503	371	
Kityang	Jan. 21-Mar. 16			Present.
Nanking	Dec. 10-Mar. 16			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Egypt:				
Cairo	Dec. 10-Mar. 4	4	1	
Port Said	Jan. 30-Feb. 4	1		
France:				
Havre	Mar. 10-16		4	
Marseille	Jan. 1-Feb. 29		4	Nov. 1-30, 1 death.
Paris	Dec. 3-Mar. 16	113	2	
Germany				Total, Dec. 31-Mar. 23: Cases 63
Hamburg	Jan. 21-27	1		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
Liverpool	Mar. 17-23	1		
London	Jan. 14-Feb. 24	6	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-Mar. 9	2		
India:				
Bombay	Nov. 19-Mar. 9	466	223	
Calcutta	Nov. 19-Feb. 17		23	
Madras	Nov. 26-Mar. 9	142	58	
Rangoon	Oct. 1-Dec. 31	61	17	
Indo-China:				
Saigon	Nov. 13-Mar. 4	37	7	
Italy:				
Genoa	Dec. 1-Mar. 15	45	2	
Leghorn	Dec. 16-Mar. 16	95	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-Mar. 25	91	1	
Palermo	Nov. 26-Mar. 23	2,599	885	
Turin	Jan. 15-Mar. 24	8		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	2	1	Jan. 20, 1 case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12-18	1		
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Java:				
Batavia	Nov. 12-Mar. 2	43	12	
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Apr. 6	6	2	
Juarez	Dec. 19-Mar. 9	14	5	
Magdalena	Dec. 23-Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-Mar. 19		11	Mar. 16, 25 cases in the lazaretto.
Mexico	Nov. 26-Feb. 17	135	67	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	Mar. 23, present in vicinity.
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Feb. 10	4	1	
Tampico	Dec. 1-Mar. 30		15	
Tapachula	Nov. 1-Jan. 31		18	
Philippine Islands				Third quarter, 1911: Manila, cases; no deaths.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 19, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Portugal:				
Lisbon	Dec. 9-Mar. 19	49	....	
Russia:				
Batum	Dec. 1-31	1	....	
Libau	Dec. 17-23	1	....	
Moscow	Nov. 19-Mar. 9	47	3	
Odessa	Nov. 26-Mar. 16	24	1	
Reval	Nov. 1-30	1	....	
Riga	Dec. 24-Jan. 27	16	....	Oct. 1-Nov. 30; deaths, 2.
St. Petersburg	Nov. 19-Mar. 16	159	29	
Warsaw	Nov. 5-Feb. 10	....	283	
Siam:				
Bangkok	Nov. 5-Jan. 27	....	1,326	
Siberia:				
Omsk	Jan. 1-31	7	....	
South Africa:				
Durban	Jan. 21-Feb. 24	4	....	
Johannesburg	Jan. 7-Feb. 10	36	....	
Spain:				
Barcelona	Feb 6-12	....	1	
Cadiz	Nov. 1-Feb. 29	....	27	
Madrid	Dec. 1-Jan. 31	....	3	
Malaga	Nov. 1-30	....	45	
Seville	Dec. 1-Feb. 29	....	8	
Valencia	Dec. 3-Mar. 23	293	13	
Straits Settlements:				
Penang	Feb. 11-17	1	....	
Singapore	Nov. 19-Feb. 17	26	10	
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1	....	
Zurich	Dec. 3-23	6	....	
Teneriffe:				
Santa Cruz	Dec. 3-Mar. 16	....	48	
Turkey in Asia:				
Beirut	.....do	1,335	102	
Turkey in Europe:				
Constantinople	Dec. 4-Mar. 24	....	128	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Mar. 16	163,084	55	....	....	....	....	....	....	....	1	....	1	....
Aguascalientes	Apr. 7	40,000	56	....	....	....	....	....	3	1	....	....	4	....
Aix la Chapelle	Mar. 16	157,578	74	9	....	....	....	....	1	....	....	....	1	1
Amsterdam	Mar. 30	582,586	129	26	....	....	....	....	....	1	....	2	4	3
Antwerp	Mar. 23	316,604	72	6	....	....	....	....	....	....	1	....	1	3
Athens	..do	250,010	73	31	....	....	....	....	....	....	3	....	....	....
Barmen	..do	171,200	....	5	....	....	....	....	....	....	....	....	1	....
Batavia	Mar. 2	217,630	....	....	....	....	....	....	1	....	....	....	....	....
Belfast	Mar. 30	385,492	145	24	....	....	....	....	....	....	....	....	....	10
Belgrade	Mar. 23	90,050	29	....	....	....	....	....	....	....	....	1	....	....
Berlin	Mar. 16	2,085,258	646	103	....	....	....	....	....	1	4	28	14	1
Bordeaux	Mar. 30	253,000	100	10	....	....	....	....	....	....	....	....	5	....
Bremen	Mar. 16	246,850	87	16	....	....	....	....	....	....	4	1	7	....
Brunswick	..do	145,000	....	3	....	....	....	....	....	2	3	7	....	....
Brussels	Mar. 23	739,684	175	26	....	....	....	....	....	....	1	....	3	1

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Budapest	Mar. 16	1,000,000									4	1	2	
Catania	Mar. 29	207,000		3								1	1	
Christiana	Mar. 30	246,000	98	13							1	1	1	1
Coburg	Mar. 23	23,794	10	1										1
Cologne	..do	527,663	175	25							1	3		5
Constantinople	Mar. 24	1,000,000	328					14		6	6		3	
Copenhagen	Mar. 16	465,000	139	17							1	3	1	3
Dresden	..do	556,200	144	24						1	1			1
Do	Mar. 23		142	16							2	3		1
Dublin	Mar. 16	406,536		35						3		5	7	
Do	Mar. 23		203	34						1	2	3	6	
Edinburgh	Mar. 23	321,200	111	11								1	9	1
Do	Mar. 30	316,200	80								1		4	1
Frankfort on the Main	Mar. 16	423,600	93									3		
Ghent	..do	166,235	67	8										1
Glasgow	Mar. 23	785,600	283							2	1	4	22	6
Do	Apr. 5		277								3	2	27	14
Gothenburg	Mar. 23	170,100	56	15								1		1
Guadalajara	Apr. 6	119,468	82								1			
Halifax	Mar. 30	46,000	20	1										
Do	Apr. 6		14	2								1		
Hamburg	Mar. 23	953,079	259	30							3	10	1	3
Hongkong	Mar. 2	336,488			6			65		2				
Kharput	Mar. 16	21,000								1			1	
Konigsberg	..do	252,200	110	17									2	3
Libau	Mar. 24	84,000									1			
Leeds	Mar. 30	445,568	105	15									2	
Leipzig	Mar. 23	605,755	157	23						1		1	1	2
Leith	Mar. 30	81,000	19										6	1
Liege	Mar. 23	167,630	50	4						1	3			
Liverpool	Mar. 30	752,055	256	22								3	3	6
London	..do	7,340,125	1,716							1	3	20	18	44
Montreal	Apr. 6	466,197	193	28						1	3	1	1	7
Moscow	Mar. 9	1,500,000	735	103				1	1	2	19	6	17	9
Nantes	Mar. 24	170,535	71	21						1				
Palermo	Mar. 23	340,000	177	10						12	2			
Port Elizabeth	Mar. 2	30,692	15	2						1		1		
Port of Spain	Mar. 16	60,000	36	4						1				1
Prague	..do	225,204	107	22								2	7	
Do	Mar. 23		118	22						3			6	
Quebec	Apr. 6	78,200		1										
St. Petersburg	Mar. 16	907,708	745	125				4	1	9	19	8	21	3
San Luis Potosi	Feb. 3	82,476		2						4		1	1	
Do	Feb. 10		63	9						1				1
Southampton	Mar. 30	120,896	24	2									1	
Stettin	Mar. 23	240,000	83	11								2		
Stoke-on-Trent	Mar. 20	237,153	78	10							2	4		
Tampico	Mar. 30	23,252	44					1				1		1
Tientsin	Mar. 16	465,000	24	7										1
Toronto	Mar. 23	392,000	127	8						1	1	2		2
Do	Mar. 30		148	5						1		2	1	
Do	Apr. 6		96	3							1			
Trieste	Mar. 16	232,822	111							1			6	
Valencia	Mar. 23	235,000	122	4										
Veracruz	Mar. 23-30	32,000	31	14										
Vienna	Mar. 16	2,064,583	707	95						1	5	3	6	3
Winnipeg	Apr. 6	151,958	68	4								2	3	

MORTALITY FOREIGN AND INSULAR COUNTRIES AND CITIES
(Untabulated.)

British East Africa—*Mombasa.*—Month of February, 1912. Population, 26,000. Total number of deaths from all causes 37, including tuberculosis 2.

Great Britain.—Week ended March 23, 1912:

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 14.1 per 1,000 of the population, which is estimated at 17,559,219.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 20.7 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Waterford, viz, 7.6, and the highest at Dundalk, viz, 43.7, per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 17.4 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Partick, viz, 5.3, and the highest at Kilmarnock, viz, 25.5, per 1,000. The total number of deaths from all causes was 726, including diphtheria 9, measles 50, scarlet fever 5, typhoid fever 2.

Italy—*Genoa.*—Two weeks ended March 31, 1912. Population, 272,077. Total number of deaths from all causes 199, including diphtheria 4, tuberculosis 20.

New Zealand.—Month of December, 1911.

Auckland.—Population, 102,676. Total number of deaths 81, including tuberculosis 2.

Christchurch.—Population, 80,193. Total number of deaths 40, including tuberculosis 4.

Dunedin.—Population, 61,828. Total number of deaths 42, including tuberculosis 3.

Wellington.—Population, 70,729. Total number of deaths 58, including tuberculosis 5, typhoid fever 1.

Panama—*Panama.*—Month of March, 1912. Population, 30,000. Total number of deaths from all causes not reported. The deaths include diphtheria 1, tuberculosis 11.

Spain—*Almeria.*—Month of March, 1912. Population, 50,910. Total number of deaths from all causes 127, including tuberculosis 11, typhoid fever 2.

Tripoli—*Tripoli.*—Two months ended March 31, 1912. Population, 50,000. Total number of deaths from all causes 509, including measles 3, tuberculosis 13, typhoid fever 28.

Turks Islands.—Two weeks ended April 6, 1912. Population, 1,675. One death. No contagious diseases.

Venezuela—*La Guaira.*—Two weeks ended March 15, 1912. Population, 10,000. Total number of deaths from all causes 13, including tuberculosis 2, typhoid fever 1.

By authority of the Secretary of the Treasury:

Rupert Blue,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

VOL. XXVII. MAY 3, 1912. No. 18.

ORGANIZATION OF A SANITARY LEAGUE AT NORFOLK, VA.

By C. P. **Wertenbaker**, Surgeon, Public Health and Marine-Hospital Service.

A sanitary league was formed by the citizens of Norfolk on March 26, 1912, with the object of improving the sanitary conditions of the city and suburbs.

The form of organization of this league differs in some respects from that usually adopted by such organizations, and as it appears to have certain advantages for effective work attention is invited to it.

For the purposes of the league the city and adjacent suburbs are divided into sanitary districts corresponding to the wards of the city, or of the suburb, when the latter is not within the city limits. For each of these districts there is a vice president who is in charge of all the work of the league in that district. He has authority to appoint committees and to inaugurate any measures that may seem desirable to carry on the work in his territory, reporting, however, to the executive council of the league.

By this arrangement each sanitary district is in a way independent, and in effect the league consists of a number of minor organizations each of which is composed of residents of their respective districts and whose work is chiefly directed to the territory with which they are most familiar and in which they have the greatest interest. It is also thought that this arrangement will stimulate a spirit of friendly rivalry between the different districts and thus develop more effective work.

The affairs of the league are conducted by an executive council consisting of the president, secretary-treasurer, one vice president at large, and one vice president for each of the sanitary districts, and four other members. This gives representation in the executive council to all the elements in the league. The council meets regularly twice each month, and more frequently if necessary.

The distinctive note struck by this league is the pledge required from the members that they will keep their premises clean, sanitary, and attractive. The following application for membership is printed on a card about the size of a postal card, but a little smaller to permit of its being inclosed in an ordinary envelope, and contains a coincarrier to allow a 50-cent piece (the amount of the annual dues) to be sent by mail:

Norfolk, Virginia, ..., 1912.

To the SECRETARY,
Sanitary League of Norfolk, Va.

SIR: I desire to become a member of the Sanitary League of Norfolk, Va. I promise to keep my premises clean, sanitary, and as attractive as possible. I will do all that I can to improve the appearance and sanitary condition of the block in which I live. I inclose 50 cents for annual dues.

Name..................................
Address............................
Ward...... Telephone No.......

Fill out and sign this card and inclose it with 50 cents to A. P. Pannill, secretary-treasurer, Health Office, Norfolk, Va.

The first efforts of the league have been directed to increasing the membership, and for this purpose the above card has been distributed to the officers and members, who have commenced a systematic campaign throughout the entire city to secure new members. As soon as a new member is enrolled he or she is furnished with application cards and joins in the efforts to get other members, thus creating a sort of endless chain arrangement.

It is the aim of the league to secure 10,000 members within two months. It is especially desired to induce women to become members, as the home is the special province of woman, and on her depends its appearance and sanitary condition.

The movement has aroused great interest throughout the city and suburbs, and has received the indorsement of the board of trade and business men's association, the industrial commission, the civic department of the woman's club, and the newspapers.

The actual work of correcting insanitary and unsightly conditions in each district is to be left to the district organization, though the league, through the executive council, will give such assistance as may be necessary.

It is proposed to have classes for the instruction of district vice presidents in the details of sanitary and beautification work, and these classes will also be open to any member of the league who may care to attend. There will also be frequent meetings of the district organizations at which the needs of the district will be discussed and measures adopted to meet them. Lectures and addresses illustrated by lantern slides will be given for the purpose of keeping up interest in the work, and to educate the members in various phases of public health and beautification work. Considerable stress will be laid on beautification work, as it is believed that it exercises a marked and beneficial effect on sanitary conditions.

As it is probable that other communities may desire to adopt the "Norfolk plan" of organization for a Sanitary League, the constitution and by-laws adopted by the Norfolk Sanitary League are herewith appended so that they will be available for other communities that may wish to use them as a model, with such modifications as may be considered desirable in each case.

THE SANITARY LEAGUE OF NORFOLK, VA.

CONSTITUTION.

ARTICLE I.

This organization shall be known as the Sanitary League of Norfolk, Va.

ARTICLE II.

Its objects are as follows:

(*a*) The sanitary improvement of the city of Norfolk.

(*b*) The education of its members and the public generally in matters of sanitation.

(*c*) To eliminate preventable diseases from the city as far as practicable, and to encourage the proper care of such cases as may occur.

(*d*) To aid and support local, State, and national health authorities in their efforts to protect the health of the people.

(*e*) To accomplish the above objects:

By encouraging the sanitation and beautification of the homes of its members, and the elimination as far as possible of flies and mosquitoes.

By stimulating interest in methods for prevention of disease, and the preservation of health, by lectures, publications, and other means.

By cooperation with other organizations having similar or allied aims.

ARTICLE III.

Meetings shall be held at such times and places as may be prescribed in the by-laws.

ARTICLE IV.

Ten members shall constitute a quorum for the transaction of business.

BY-LAWS.

ARTICLE I.—MEMBERSHIP.

Any person interested in the objects of the league may become a member after election by the executive council and the payment of 50 cents annual dues.

SEC. 2. Each member shall be entitled and is urged to wear a button bearing the words, "Sanitary League of Norfolk, Va."

ARTICLE II.—OFFICERS.

The officers of the league shall be as follows:

(*a*) President.

(*b*) As many vice presidents as may be desirable. One for each ward is thought to be a good number, but if it is preferred the city may be divided into districts with a vice president for each.

(*c*) Secretary treasurer.

(*d*) An executive council, consisting of the president, vice presidents, secretary treasurer, and four other members, shall conduct the affairs of the league and report to the league at the annual meeting.

Vacancies on the executive council will be filled by the president.

SEC. 2. All officers shall be elected at the annual meeting, and hold office for one year, or until their successors are elected, and perform the usual duties of their respective offices.

SEC. 3. In the event that the association shall fail to fill any offices by election, the president is authorized to fill such offices by appointment, and the officers thus appointed shall hold office until the next annual meeting, or until their successors are elected.

ARTICLE III.—COMMITTEES.

The following standing committees shall be appointed by the president: (*a*) Finance, (*b*) sanitation, (*c*) publicity, and such temporary committees as may be necessary.

SEC. 2. The finance committee will have charge of the work of raising funds for the league, and will also audit the books of the treasurer.

(*b*) The duties of the committees on sanitation, of which there shall be one for each ward or district, to be known as ward or district committee on sanitation, to consist of three or more members, shall be to make a careful inspection of their respective wards or districts not less than once each month, noting all insanitary and unsightly conditions, and endeavoring to correct them. Frequent reports should be made by each of the district or ward sanitary committees to the executive council.

(*c*) The vice president of each ward or district is authorized to appoint a sanitary committee for his ward or district, and such other committees as may be necessary.

(*d*) The committee on publicity shall arrange for lectures before the members of the league, prepare for publication matters of interest to the league, and in general have charge of all matters relating to publicity.

ARTICLE IV.—DISBURSEMENTS.

Disbursement of the funds of the league shall be made upon the authority of the executive council. No money shall be paid out of the treasury of the league except upon the written order of the president, and such orders, with the receipted bill, shall be held by the secretary-treasurer as vouchers for his authority for making each expenditure.

SEC. 2. The books of the treasurer shall be audited by the finance committee just before the annual meeting, and a report made to the league.

ARTICLE V.—TIMES OF MEETINGS.

The times of meetings of the league shall be determined by the executive council. The annual meeting shall be held on the first Monday in March, for the election of officers and other business.

ARTICLE VI.—AMENDMENTS.

These by-laws may be amended at any regular meeting of the league, provided that a notice of the proposed amendment is given with the call of the meeting. A majority vote is required to adopt an amendment.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

DALLAS, TEX.

MILK—PRODUCTION, CARE, AND SALE.

SECTION 1. That for the purpose of promoting and obtaining for the people of the city of Dallas the production of pure and wholesome milk, and for the purpose of establishing and maintaining a standard of sanitary conditions governing dairies inside and outside of the city of Dallas, doing business within the city of Dallas, and establishing and maintaining a standard of quality of all dairy products sold in the city of Dallas, the following rules and regulations are hereby adopted:

1. Every building used for the purpose of stabling dairy cattle shall be well lighted and ventilated, and said buildings shall be provided with a floor which can be readily cleaned and drained, and shall contain not less than 400 cubic feet for each cow.

2. No water-closet, privy, cesspool, or urinal shall be located within any building, shed, or room which is used for stabling any cow or cows for dairy purposes, or which is used for the storage of milk or cream, nor shall any hog, horse, sheep, or goat be kept in any room used for such purposes.

3. Every building, shed, or room in which any cow or cows are kept for dairy purposes shall be kept clean and in good repair and shall be painted at least once in every two years, or shall be whitewashed once every year.

4. All manure shall be removed from the building, room, or stable in which any cow or cows are kept for dairy purposes, twice each day, and the same shall not be deposited where odors therefrom can be noticed at such buildings, rooms, or stables.

5. Every person who shall use any premises for the keeping of any cow or cows for dairy purposes shall cause the yard in connection therewith to be provided with proper receptacles for drinking water for such cow or cows, and such receptacles shall be kept supplied with fresh, clean, pure water, and such receptacles shall be cleaned at least twice each week, and such yard shall be graded or drained in such manner as to keep the same dry and prevent the accumulation of water thereon, and no garbage, urine, fecal matter, or similar substance shall be placed or allowed to remain in such inclosure.

6. Every person who shall keep a cow or cows for the production of milk for sale shall cause the udder of such cow or cows to be thoroughly washed and cleansed each time before said cow or cows are milked.

Every person who shall keep a cow or cows for dairy purposes shall provide and use a sufficient number of pails, cans, or other receptacles, made of glass, stoneware, or tin, for the reception, storage, and delivery of milk, and shall cause all milk to be immediately removed, after milking, from the building, shed, or room in which such cow or cows are kept to a separate milk room.

* * * * * * *

8. The room in which the milk is kept shall be thoroughly screened with not coarser than 14-mesh wire screen and shall be thoroughly protected against flies and shall be kept clean and free from dust and dirt. It shall not be used as a sleeping room, and shall be separate and apart from the building, shed, or room in which the cow or cows are kept. It shall be constantly supplied with pure water and suitable facilities for straining, cooling, and storing milk, and washing and sterilizing all utensils in which milk is received, stored, or delivered.

9. All cans, measures, bottles, and other receptacles or utensils of any sort used in the handling, conveying, or sale of milk shall be sterilized (scalded with boiling water or live steam) daily.

10. All milk shall be strained through cloth or wire strainers and cooled to a temperature of 55 to 60° F., and if stored in the milk room for longer than three hours it shall be stored in a cooler or refrigerator.

11. If any person who is engaged in the production, transportation, delivery, or distribution of milk, or any member of the family, or any of the employees of such person, or any of their immediate associates, or any person residing in any building where milk is stored, sold, or distributed, shall contract any contagious or infectious disease, such person shall immediately notify the city health officer thereof.

12. No person having any infectious disease, or having been recently exposed to such disease, shall milk or handle any utensil used in handling milk intended for sale until in the opinion of the city health officer all danger of communicating such disease shall have passed.

13. No bottle, can, or receptacle used for the reception or storage of milk shall be removed from a private house, apartment, or tenement where any person has an infectious disease within such house, apartment, or tenement without the approval of the city health officer of the city of Dallas.

14. It shall be unlawful for any person to take milk from any cow which has a calf less than 9 days old and sell or offer for sale such milk.

15. All privies, dry closets, cesspools, or urinals located on any premises on which cows are kept for dairy purposes shall be thoroughly screened with not coarser than 14-mesh wire screen.

16. That it shall be unlawful for any person, either by himself or agent, to sell or expose for sale or exchange any unwholesome, watered, adulterated, or impure milk or swill milk or colestrum, or milk from cows kept upon garbage, swill, or any other substance in a state of putrefaction, or other deleterious substances, or from cows kept in connection with any family in which there are infectious diseases, or from sick or diseased cows: *Provided*, "Skim milk" may be sold if on the can or package from which such milk is sold the words "Skim milk" are distinctly painted in letters not less than 1 inch in length.

Sec. 2. That should any person who owns or maintains or who has charge of any dairy, or any person who shall be employed at any dairy, or any person employed on any dairy wagon, or any other person who shall violate any of the terms of this ordinance, shall upon conviction, be fined in any sum not exceeding $200.

Sec. 3. That all ordinances and parts of ordinances in conflict with this ordinance be, and the same are hereby, repealed.

Sec. 4. Whereas, on account of the unsanitary manner in which dairies are being kept, and the manner in which the cows thereon are permitted to be fed and kept, greatly affects the purity of the milk sold to the inhabitants of the city of Dallas from such dairies, and thereby creates an emergency and an urgency for the immediate preservation of the public health, that this ordinance be in effect from and after its passage, as in the charter in such cases made and provided; and it is accordingly so ordained that this ordinance be, and the same is hereby, declared to be in effect, in accordance with the charter in such cases made and provided.

[Ordinance adopted Oct. 16, 1911.]

MANSFIELD, OHIO.

MILK, CREAM, AND ICE CREAM—BACTERIAL CONTENT, INSPECTION, AND SALE.

Sec. 35 (*a*) The word "person" refers to any and all individuals, owners, agents, corporations, officers, and other parties who may offer milk, cream, or ice cream for sale.

(*b*) No person shall bring into this city for sale or shall sell or offer for sale any milk or cream containing bacteria of any kind, more than 500,000 per cubic centimeter.

(*c*) No person shall bring into this city for sale or shall sell or offer for sale any ice cream containing bacteria of any kind, more than 1,500,000 per cubic centimeter.

(*d*) The dairy and food inspector shall take sample of milk, cream, and ice cream from every person who sells or offers for sale any milk, cream, or ice cream, and shall subject such samples to suitable tests and analyses.

(*e*) The board of health shall revoke the permit of any person who neglects or refuses to comply with the regulations of the board of health relating to milk, cream, or ice cream; and the sale of the same must stop upon receipt of written notice from the dairy and food inspector, who is hereby empowered to order the discontinuance of sale of milk, cream, or ice cream by any person, pending investigation and action of the board of health.

(*f*) The foregoing are all declared to be orders and regulations of the board of health made pursuant to the provisions of the laws of the State of Ohio, and whoever violates, or obstructs, or interferes with the execution of any of the foregoing orders, or willfully, or illegally omits to obey such orders, shall be fined any sum not exceeding $100, or imprisoned for any time not exceeding 90 days or both, but no person shall be imprisoned for any such violation or failure to obey any of the foregoing orders and regulations for the first offense and the prosecution shall always be as and for a first offense, unless the affidavit upon which the prosecution is instituted contains the allegation that the offense is a second or repeated offense, all of which is in accordance with section 4414 of the General Code of Ohio, in such case made and provided.

(*g*) That section 35 of subdivision 3 of the regulations of the board of health in the codified ordinances of the city of Mansfield, Ohio, be amended by adding the foregoing subsections.

(*h*) This regulation shall take effect and be in force from and after the earliest period allowed by law.

[Regulation, board of health, adopted July 7, 1911.]

NEWPORT KY.

MILK AND MILK PRODUCTS—PRODUCTION, CARE, AND SALE.

SECTION 1. The board of health of the city of Newport or its agents may enter at any time, and no person shall hinder or prevent them from so entering, any place in the city of Newport where milk or milk products from cows or dairies is kept or held for sale for human food.

SEC. 2. It shall be unlawful for any person, firm, or corporation to bring into or receive into the city of Newport for sale, or offer for sale therein, or have on hand for purpose of sale, any milk or cream or products from cows or dairies, without first having obtained from the board of health of the city of Newport a permit to do so, said permit to be obtained as hereinafter provided.

SEC. 3. To procure the permit provided for in section 2 hereof, the applicant therefor shall file with the board of health of the city of Newport a written statement setting forth his residence and place of business, the number of cows owned by him, the name and address of any and all persons from whom he is purchasing or obtaining milk, cream, buttermilk, sour milk, butter, or other dairy product, and the quantity of such products sold by him daily. It shall be the duty of the holder of such permit to notify the board of health in writing of any change in the name or address of the person or persons from whom he obtained his supply of milk, cream, buttermilk, sour milk, or other dairy product.

SEC. 4. Upon the board of health of the city of Newport being satisfied that the place or places where the milk or milk products are to be kept or offered for sale, or from which they are obtained, are sanitary, or that the cows from which said milk is obtained are free from disease and kept in a sanitary place and manner, said board of health shall grant a permit to the applicant conditioned upon his compliance with the terms of this ordinance and the rules and regulations of the State board of health and the board of health of the city of Newport. Said permit may be revoked at any time by the board of health of Newport, Ky., should the holder thereof fail or refuse to comply with the provision of the ordinance.

SEC. 5. No person or persons shall keep a cow in the city of Newport without a permit from the board of health.

SEC. 6. All permits shall be renewed during the month of May of each year to be valid. Renewals of permits may be granted at the discretion of said board of health in the same manner as the original permits are granted.

SEC. 7. There shall be no charge for the permits provided for in sections 2 and 5 hereof, but the applicant therefor must agree to furnish free of charge such samples of milk or products from cows or dairies as may be necessary for the purpose of analysis. The applicant must further agree to allow the inspection by said board or its agents of his premises, cows, dairy utensils, or anything pertaining to the business of operating a dairy or milk depot at all times.

SEC. 8. It shall be unlawful for any person to sell, offer for sale, or have on hand for sale in this city any milk or butter, who fails or neglects by himself or agents to comply with all the terms of this ordinance, or who sells or offers for sale, or has on hand for sale, products from cows or dairies which are not maintained or kept as required by the terms of this ordinance.

SEC. 9. No building shall be used for stabling milk cows which is not well lighted, ventilated, drained, and constructed in such manner as to render same sanitary.

SEC. 10. All stalls or places where the cows are milked shall be provided with clean floors. The accumulation of urine, manure, stagnant water, or any other filth shall not be permitted in the stable or barnyard or other place where milk cows are kept, the products from which are for sale within the city of Newport.

SEC. 11. No water-closet, cesspool, urinal, habited room, or workshop shall be located within any building or shed used for stabling cows used for dairy purposes, nor shall any fowl, hog, horse, sheep, or goat be kept in any room used for such purposes.

SEC. 12. Every building or shed for keeping cows for dairy purposes shall be kept clean and in good repair and well painted or whitewashed.

SEC. 13. Milk from cows suffering with tuberculosis, actinomycosis, Texas fever, abscesses, or any other contagious or infectious diseases, and milk from cows that will calve within 15 days or that have calves within 10 days, shall not be sold or kept for sale in the city of Newport.

SEC. 14. It shall be the duty of every person having charge or control of any premises upon which cows are kept to notify the board of health of the existence of any contagious diseases or recurring inflammation or abscess of the udder immediately upon the discovery thereof, and to immediately isolate such cow or cows and keep same apart from the herd until permission is granted in writing by the board of health to permit such cow or cows to return to the herd.

SEC. 15. It shall be unlawful for any dairyman to feed milk cows or have in his possession with intention to feed milk cows, any garbage, swill, refuse, or any other food prohibited by the statutes of the State of Kentucky.

SEC. 16. All milkers or other attendants who handle the milk or cream, buttermilk, or sour milk which is offered for sale or delivered in the city of Newport shall be personally clean, and all such persons before entering upon their duties shall thoroughly wash their hands with soap and water, and no milker shall be permitted to wash the teats of the cows with milk or water in the milk bucket or to milk the cow with wet or moist hands.

SEC. 17. It shall be the duty of any person having charge of or control of any premises upon which milk or cream, buttermilk or sour milk is produced, handled, stored, or distributed to notify the board of health immediately upon the discovery of diphtheria, measles, membraneous croup, scarlet fever, smallpox, typhoid fever, or any other contagious or infectious diseases upon such premises.

SEC. 18. Any person who attends to cows, or milks them, or who has the care of handling of vessels used for the sale, storage, or distribution of milk, cream, buttermilk, or sour milk, shall not enter any place or premises wherein exists any of the diseases mentioned herein nor shall any person have any communication, direct or indirect, with any person who resides in or is an occupant of such infected place.

SEC. 19. All vehicles used for hauling or distributing milk or cream, buttermilk, or sour milk must be kept in a sanitary condition and must not be used for hauling manure, slops, or anything else of any insanitary character.

SEC. 20. Each vehicle used for hauling or distributing milk or cream, buttermilk, or sour milk shall have printed on each side thereof the letters not less than 3 inches high the name of the dairy, the name of the person to whom such permit was granted, and the number of such permit.

SEC. 21. All milk depots and places for handling milk, cream, buttermilk, or sour milk must be kept thoroughly clean throughout and must be screened so as to exclude all flies. The floors of such milk depots must be of cement or tiling or other impervious flooring. The room in which the milk is to be handled or kept shall be screened or protected in such manner as to be free from flies and bugs.

SEC. 22. No person or persons shall bring into or receive into the city of Newport for sale or offer for sale therein, or have on hand for purpose of sale, any milk, buttermilk, cream, or products from cows or dairies which are stored or kept in any basement, cellar, refrigerator, milk house, dairy, or other place which communicates directly with any insanitary closet or room or any horse or cow stable.

SEC. 23. All milk shall be cooled, strained, and stored in rooms outside of the cattle barns, and there shall be no communications between it and any barn or other building. Said cooling rooms must have cement, concrete, or other impervious floors, must be kept whitewashed and clean at all times, and must be screened in such a way as to exclude all flies and vermin.

SEC. 24. No pasteurized or sterilized milk shall be sold in the city of Newport unless it is conspicuously labeled "pasteurized" or "sterilized." Said label shall state the degree (temperature and length of exposure at that temperature) and date of pasteurization or sterilization.

SEC. 25. All milk shall be marketed as soon as possible after milking.

SEC. 26. All milk brought into the city or sold or offered for sale in the city must not contain more than 500,000 bacteria per cubic centimeter.

SEC. 27. It shall be unlawful for any person or persons to bring into the city of Newport for sale or to sell any milk which contains any manure or dirt (that is, in quantities sufficient to be detected with the naked eye, after the milk has been standing one hour or more).

Sec. 28. No milk shall be kept in ice boxes or refrigerators which are in any way connected with sewers or cesspools nor shall any milk be kept in the same compartment of any ice box or refrigerator in which meats or other articles of food are kept.

Sec. 29. It shall be unlawful for any dealer in milk or cream or other dairy products, or his agents, for the purpose of serving milk, cream, or other dairy products, to enter any building that has in it any contagious disease, or that is placarded by the board of health for contagious disease, until such placard has been removed by the proper authorities. This section is not intended to prevent the delivery of milk or other products to such dwellings.

Sec. 30. It shall be unlawful for any person to remove from such dwelling any bottles or receptacles which have been or are to be used for the purpose of receiving or storing milk or cream, buttermilk or sour milk, without a written permit from the board of health or its agents.

Sec. 31. It shall be unlawful for any dealer in milk or cream, or his agents, to bottle or cause to be bottled or to be placed in jars or cans or any open container any part of his milk or cream supply while upon the wagon or at any other place than the dairy or milk depot.

Sec. 32. It shall be unlawful to sell or offer for sale, or have on hand for sale, in the city of Newport any milk, cream, buttermilk or sour milk containing any preservatives of any kind, or which is adulterated or unwholesome.

Sec. 33. The words "adulterated or unwholesome milk" as used in this ordinance mean: (1) Milk offered or kept for sale as whole milk or sold as such, which contains less than 8½ per cent of solids not fat, and less than 3¼ per cent of milk fat. (2) Milk which has been diluted with water or fluid, or to which has been added or into which has been introduced any foreign substance whatever. (3) Milk drawn from animals fed on any substance which does not comply with the general laws of the State of Kentucky. (4) Milk drawn from cows kept in crowded or unhealthy condition. (5) Milk, the temperature of which is higher than 60° F. (6) Milk which contains more than 500,000 bacteria to the cubic centimeter. (7) Milk containing more than two-tenths of 1 per cent of lactic acid.

Sec. 34. Skimmed milk, for sale as such, shall not contain less than 9¼ per cent of milk solids. All vessels, packages, cans, etc., containing skimmed milk, shall have the whole exterior of the can, including the lid, painted a bright red color, and shall have painted in black letters on the exterior of the body of the can not more than 6 inches from the neck of the can the words "Skimmed milk," in letters at least 3 inches high; such cans to be kept well painted at all times.

Sec. 35. All buttermilk sold or offered or kept for sale in milk depots, groceries, hotels, restaurants, lunchrooms, etc., shall be kept at a temperature not higher than 60° F., the same sanitary rules to govern the production or keeping for sale of buttermilk which control the sale or production of sweet milk.

Sec. 36. All buttermilk offered for sale in the city of Newport as buttermilk, or sold as such, must not contain more than 93 per cent of watery fluid and not less than 7 per cent of solids. It shall be unlawful to sell or offer for sale or have on hand for sale in the city of Newport any adulterated or unwholesome buttermilk.

Sec. 37. The words "adulterated or unwholesome buttermilk" as used in this ordinance mean: (1) Buttermilk containing more than 93 per cent of watery fluid or less than 7 per cent of milk solids; (2) buttermilk which has been diluted with water or any other fluid, or to which has been added or into which has been introduced any foreign substance whatever; (3) buttermilk kept in stores, lunchrooms, restaurants, etc., and offered for sale shall not be kept in metallic containers; (4) buttermilk the result of milk or cream obtained from cows fed on any substance not complying with the general laws of the State of Kentucky; (5) buttermilk from products of cows kept in a crowded or unsanitary condition.

Sec. 38. All vessels containing buttermilk which is held or offered for sale in the city of Newport must be labeled in such a manner as to plainly show the age of the buttermilk.

Sec. 39. Cream sold or kept for sale as such must contain at least 18 per cent butter fats and must not contain any foreign substance or coloring matter.

Sec. 40. Ice cream sold or kept for sale in the city of Newport shall be: (1) Ice cream shall be a frozen product made from cream and sugar with or without natural flavoring and shall contain not less than 14 per cent of milk fat. (2) Fruit ice cream shall be a frozen product made from cream, sugar, and sound, clean, mature fruits and shall contain not less than 12 per cent of milk fat. (3) Nut ice cream shall be a frozen product made from cream, sugar, and sound, nonrancid nuts and shall contain not less than 12 per cent of milk fat. All ice cream factories or any other place where ice cream or any substance having the resemblance of ice cream is manufactured or offered for sale must be kept in a sanitary condition, and all utensils, apparatus, etc., used in the manufacture, sale, or distribution of ice cream or other frozen products must be kept in a sanitary condition at all times.

SEC. 41. All cans, bottles, or vessels of any kind used for holding milk or cream must be cleaned at least once a day with soap or soda or other cleansing preparation made for the purpose and then rinsed with boiling water. They should always be cleaned as soon as empty.

SEC. 42. If any provision of any section of this ordinance shall conflict with the rules of the State pure food commission, the rules of the latter shall govern.

SEC. 43. Copies of this ordinance shall be printed and a copy of the same delivered with each permit or renewal of same, and said copy must be posted in a conspicuous place in the dairy or milk depot of the party holding such permit.

SEC. 44. Any person, firm, or corporation, their agent or employees, who shall violate any of the provisions of this ordinance shall be deemed guilty of an offense, and, upon conviction in the police court of the city of Newport, shall be punished by a fine of not less than $10 nor more than $100, or imprisonment not to exceed 30 days, or both so fined and imprisoned. (Section as amended by ordinance, approved September 1, 1911.)

SEC. 45. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

[Ordinance adopted July 13, 1911.]

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 13, 1912.

	Cases.	Deaths.		Cases.	Deaths.
Boston, Mass		1	Newport, Ky	1	
Chicago, Ill	2	1	New York, N. Y	13	3
Cincinnati, Ohio	2	1	Oakland, Cal		1
Cleveland, Ohio	5	2	Oklahoma City, Okla	6	3
Danville, Ill		1	Omaha, Nebr	5	
Dayton, Ohio		1	Racine, Wis		1
Denver, Colo	1	1	Roanoke, Va		2
Galveston, Tex	2	1	St. Louis, Mo	3	3
Haverhill, Mass	2	1	San Antonio, Tex	4	3
Kansas City, Kans	16		Seattle, Wash	2	
Kansas City, Mo	31	30	Washington, D. C	1	
Lexington, Ky	1		Wilmington, Del		1
New Orleans, La	1	1	Worcester, Mass	3	

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 13, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md		1	Kalamazoo, Mich	3	
Binghampton, N. Y	1		Kansas City, Mo	1	
Bridgeport, Conn	1		Lebanon, Pa	2	
Camden, N. J	12		Los Angeles, Cal	4	
Chicago, Ill	2	1	Milwaukee, Wis	5	
Dayton, Ohio		1	New York, N. Y	60	9
Denver, Colo	2		Philadelphia, Pa	15	3
Duluth, Minn	3		Saginaw, Mich	1	1
Erie, Pa	2		St. Louis, Mo	19	
Harrisburg, Pa	2		Superior, Wis		1
Hartford, Conn	3		Taunton, Mass		1
Jersey City, N. J		1	Williamsport, Pa	1	

LEPROSY.

During the month of March, 1912, a death from leprosy occurred at Indianapolis, Ind.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 13, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Altoona, Pa		8	New Bedford, Mass		6
Auburn, N. Y	4	1	Newburyport, Mass		1
Aurora, Ill		1	New Orleans, La		7
Baltimore, Md		26	Newton, Mass		1
Binghamton, N. Y	4	4	New York, N. Y		113
Boston, Mass		44	Niagara Falls, N. Y		3
Braddock, Pa		2	Norristown, Pa	1	1
Bridgeport, Conn		3	Northampton, Mass		1
Brookline, Mass		1	Oakland, Cal		3
Cambridge, Mass		5	Oklahoma City, Okla		1
Camden, N. J	12		Omaha, Nebr		4
Chelsea, Mass		1	Pasadena, Cal		2
Chicago, Ill	35	127	Passaic, N. J		7
Cincinnati, Ohio		14	Pawtucket, R. I		2
Cleveland, Ohio	39	21	Philadelphia, Pa	40	45
Dayton, Ohio		4	Pittsfield, Mass		1
Duluth, Minn	3	3	Plainfield, N. J		1
Erie, Pa	1	1	Pottstown, Pa		1
Evansville, Ind		2	Providence, R. I		8
Everett, Mass		1	Racine, Wis		1
Fall River, Mass		7	Reading, Pa	2	3
Fort Wayne, Ind		3	Roanoke, Va		1
Galesburg, Ill	1	1	San Antonio, Tex		7
Grand Rapids, Mich		3	San Diego, Cal	1	1
Harrisburg, Pa	3	3	Saratoga Springs, N. Y	1	1
Hartford, Conn		9	Schenectady, N. Y	9	3
Kalamazoo, Mich	5	2	Seattle, Wash		5
Kansas City, Mo	13	14	South Bethlehem, Pa	3	
Knoxville, Tenn		1	South Omaha, Nebr		4
Lancaster, Pa	2		Spokane, Wash	2	2
Lawrence, Mass		6	Springfield, Ill		3
Lexington, Ky		1	Springfield, Mass		5
Los Angeles, Cal	2	11	Superior, Wis		4
Lowell, Mass		3	Taunton, Mass		1
Lynn, Mass		5	Toledo, Ohio		6
Malden, Mass		1	Waltham, Mass		2
Manchester, N. H	6	8	Washington, D. C		8
Marinette, Wis		2	Wilkes-Barre, Pa		6
Medford, Mass		2	Wilkinsburg, Pa	1	
Melrose, Mass		1	Williamsport, Pa		1
Montgomery, Ala		2	Wilmington, Del		2
Nashville, Tenn		4	Yonkers, N. Y		4
Newark, N. J		13	Zanesville, Ohio		1

POLIOMYELITIS.

During the week ended April 13, 1912, poliomyelitis was reported as follows: Boston, Mass., 2 cases; New York, N. Y., 9 cases, 1 death.

INDIANA.

During the month of February, 1912, 6 cases of poliomyelitis were reported in the State of Indiana, occurring as follows: La Porte County, 4 cases; Lawrence County, 1 case; Marion County, 1 case.

During the month of March poliomyelitis was reported as follows: Adams County, 1 case; Hancock County, 1 case; Lawrence County, 1 case; Spencer County, 1 case, with 1 death.

RABIES.

During the month of February, 1912, rabies was reported in the State of Indiana as follows: Dubois County, 1 case, 1 death; Jefferson County, 1 case; Marion County, 1 case; Wayne County, 2 cases.

During the month of March, 1912, 1 death from rabies occurred at Indianapolis, Ind.

TETANUS.

During the week ended April 13, 1912, 1 death from tetanus was reported at Baltimore, Md., 1 case at Cleveland, Ohio, and 1 death at South Bethlehem, Pa.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED MAY 3, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
*Alabama:				
Montgomery	Apr. 10-17	2		
Illinois:				
Counties—				
Adams	Mar. 1-31	1		
Bond	do	10		
Bureau	do	1		
Clinton	do	14		
Cook	do	5		
Fayette	do	5		
Henry	do	63		
Iroquois	do	1		
Kane	do	24		
Kankakee	do	1		
Knox	do	1		
Lasalle	do	22		
McDonough	do	6		
McLean	do	13		
Madison	do	7		
Marion	do	2		
Moultrie	do	1		
Peoria	do	1		
Piatt	do	4		
Rock Island	do	4		
St. Clair	do	1		
Sangamon	do	4		
Stephenson	do	2		
Vermilion	do	1		
Wabash	do	28		
Taylor Springs, city	do	1		
Wetherfield, city	do	1		
Woburn, city	do	12		
Total for State		236		
Indiana:				
Counties—				
Bartholomew	Mar. 1-31	30		
Cass	do	3		
Clark	do	1		
Dearborn	do	7		
Delaware	do	4		
Elkhart	do	1		
Fayette	do	50		
Fountain	do	3		
Gibson	do	9		
Hendricks	do	10		
Howard	do	16		
Madison	do	3		
Marion	do	5		
Noble	do	1		
Pike	do	25		
Posey	do	1		
St. Joseph	do	8	3	
Sullivan	do	4		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended May 3, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Indiana—Continued.				
Counties—Continued.				
Tipton	Mar. 1-31	25		
Vanderburg	do	6		
Vigo	do	1		
Wells	do	1		
Total for State		214	3	
*Louisiana:				
New Orleans	Apr. 14-20	10		
Michigan	Jan. 1-Feb. 29	16		Omitted from previous reports.
	Mar. 1-31	3		
Counties—				
Berrien	do	2		
Chippewa	do	1		
Eaton	do	1		
Genesee	do	6		
Hillsdale	do	1		
Ionia	do	1		
Jackson	do	9		
Kalamazoo	do	22		
Kent	do	1		
Montcalm	do	2		
Saginaw	do	1		
St. Clair	do	16		
St. Joseph	do	2		
Shiawassee	do	2		
Wayne	do	20		
Total for State		106		
Minnesota:				
Counties—				
Anoka	Mar. 12-18	1		
Chippewa	Mar. 5-11	1		
Clay	Feb. 28-Mar. 4	1		
Dakota	Mar. 1-Apr. 1	2		
Dodge	Mar. 5-11	2		
Filmore	Mar. 12-18	1		
Hennepin	Mar. 1-Apr. 1	64		
Lac qui Parle	Mar. 5-Apr. 1	8		
Marshall	Mar. 12-18	1		
Mower	do	1		
Ottertail	Mar. 11-25	5		
Polk	Mar. 1-Apr. 1	2		
Ramsey	do	106		
Renville	do	5		
Rice	Feb. 27-Mar. 4	1		
St. Louis	Mar. 19-Apr. 1	15		
Scott	Mar. 5-11	1		
Swift	Feb. 27-Mar. 4	1		
Todd	Mar. 19-25	1		
Wabasha	Mar. 12-18	1		
Wadena	Mar. 26-Apr. 1	1		
Winona	Mar. 12-25	5		
Total for State		226		
*Missouri:				
Kansas City	Feb. 1-Mar. 31	22		
St. Louis	Apr. 14-20	3		
Total for State		25		
North Carolina:				
Counties—				
Anson	Mar. 1-31	118		
Beaufort	do	1		
Buncombe	do	6		
Carteret	do	13		
Cleveland	do	5		
Columbus	do	1		
Craven	do	6		
Currituck	do	3		
Davidson	do	1		
Durham	do	2		
Granville	do	6		
Greene	do	1		
Haywood	do	10		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended May 3, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
North Carolina—Continued.				
Counties—Continued.				
Iredell	Mar. 1-31	1		
Lee	do	5		
Lincoln	do	6		
Macon	do	2		
Madison	do	8		
Mecklenburg	do	7		
Pender	do	7		
Robeson	do	5		
Surry	do	1		
Swain	do	1		
Union	do	20		
Vance	do	32		
Wake	do	5		
Warren	do	3		
Wayne	do	3		
Total for State		280		
*Tennessee:				
Knoxville	Apr. 14-20	2		
Texas:				
Counties—				
Cherokee	Feb. 1-29	1		
Nueces	do	1		
Reeves	do	1		
Tarrant	do	36	9	
Uvalde	do	4	2	
Waco	do	1		
Total for State		44	11	
Grand total for the United States		1,145	14	

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED APR. 13, 1912.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	245	12	....	8	....	11	....	....	....	54	32	6	4
Boston, Mass	670,585	242	26	3	160	4	27	1	....	....	113	24	1	1
Chicago, Ill	2,185,283	681	116	16	194	3	222	8	3	....	158	92	11	3
Cleveland, Ohio	560,663	193	17	2	130	1	36	3	1	....	22	28	4	....
New York, N. Y	4,766,883	311	27	1,785	40	....	460	24	....	....	488	181	35	6
Philadelphia, Pa	1,549,008	494	66	6	17	....	72	4	....	....	90	70	8	....
Pittsburgh, Pa	533,905	213	10	3	64	3	12	2	....	....	41	13	5	2
St. Louis, Mo	687,029	206	23	....	61	....	19	2	....	....	43	23	4	....
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	162	10	1	55	....	15	....	....	....	20	11	2	1
Cincinnati, Ohio	364,463	149	8	1	15	....	24	....	1	....	45	25	2	....
Detroit, Mich	465,766	213	9	....	....	....	45	2	....	....	....	....	....	....
Los Angeles, Cal	319,198	118	10	1	12	....	3	....	1	....	14	25	4	2
Milwaukee, Wis	373,857	140	11	1	117	3	23	1	....	....	19	11	5	2
Newark, N. J	347,469	117	20	4	123	2	14	....	2	....	35	17	2	....
New Orleans, La	339,075	40	7	1	4	....	4	....	12	....	48	29	4	1
Washington, D. C	331,069	140	5	....	41	....	1	....	1	....	24	18	5	2

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Apr. 13, 1912—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	52	6				7		2			16		
Jersey City, N. J	267,779					1						11		
Kansas City, Mo	248,381	60	6		8		7	1			2	5		
Providence, R. I	224,326	84	14	2	31	6	12				5	5	1	
Seattle, Wash	237,194	53			12		2				11	9	1	
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102.054	25	2		1		4				2	4		
Cambridge, Mass	104,839	31	5	1	149	1	4				9	5	1	
Columbus, Ohio	181,548	64	3		34		12				14	8	3	1
Dayton, Ohio	116,577	35			22		3		15			2		
Fall River, Mass	119.295	39	4				1				6	3	1	
Grand Rapids, Mich	112.571	51	1		2		5				2	3	2	3
Lowell, Mass	106,294	32	6		25		6				3	5		
Nashville, Tenn	110,364	49	1		3		3				1	5	2	
Oakland, Cal	150,174	44	5		2		5				6	8		1
Omaha, Nebr	124,096	34	2				1					5		
Spokane, Wash	104.402		2		63		5		5			3	1	
Toledo, Ohio	168.497	72	2		24		11					10	3	
Worcester, Mass	145,986	51	2		11		4				3	3	1	
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	21	7	2			1							
Brockton, Mass	56,878	15	3		65	1	6	1			3	1		
Camden, N. J	94,538		2				3				6		1	
Duluth, Minn	78,466	21	1				5				4	3		
Erie, Pa	66.525	30	3	1	4		6	1						
Evansville, Ind	69,647	12	1								2	1	4	1
Fort Wayne, Ind	63.933	21	1		14		2					1		
Harrisburg, Pa	64,186	19	4		142				7		5	1		
Hartford, Conn	98.915	37	9	1	15		10	1			7	2		
Hoboken, N. J	70,324		4				2				8			
Johnstown, Pa	55,482	14	1		2							2		
Kansas City, Kans	82.331		1		2		1						2	
Lawrence, Mass	85.892	24	4	1	6		2				2	3		1
Lynn, Mass	89.336	29	4		10		5				4	2	1	
Manchester, N. H	70.063	33	1		4		1				2	2	1	1
New Bedford, Mass	96.652	38	2	1	22		5				8	6	4	
Oklahoma City, Okla	64,205	16										4	1	
Passaic, N. J	54.773	24	2	1	37		2				3	2		
Reading, Pa	96.071	41		2	1		2				3	2		
Saganaw, Mich	50.510	21	3								2	2	6	
San Antonio, Tex	96.614	64	1		5		3		2			7		
Schenectady, N. Y	72,826	26	1		45	1	3				10	5		
South Bend, Ind	53,684	14			1		2		4		1	2		
Springfield, Ill	51,678	16										2	1	
Springfield, Mass	88,926	24	3	1	19		2				2	2	1	
Trenton, N. J	96,815	38	3				1				9	4	1	
Wilkes-Barre, Pa	67,105	26	2	1	2		2	1			9		1	
Wilmington, Del	87,411	23										4		
Yonkers, N. Y	79,803	28	6	1	11		4				1	4		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150		2		1		1				1		1	
Auburn, N. Y	34,668										1			
Aurora, Ill	29,807	8					1							
Berkeley, Cal	40,434	10	1		57			1	1		2	1	1	
Binghamton, N. Y	48,443	27	2	1	7	2	1				1	1		1
Brookline, Mass	27,792	7			3									
Chattanooga, Tenn	44,604						1		3		2			
Chelsea, Mass	32,452	11			20						2			
Chicopee, Mass	25,401	7	1		3	1	1					1		

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Apr. 13, 1912—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants—Contd.														
Danville, Ill	27,871	12					1					1		
Dubuque, Iowa	38,494	11												
East Orange, N. J	34,371	4	2		6						1			
Elmira, N. Y	37,176	15	5	1	2							1	3	
Everett, Mass	33,484	7			10						1	1		
Fitchburg, Mass	37,826	6	2								1		1	
Haverhill, Mass	44,115	15			16		7				1	1	1	
Kalamazoo, Mich	39,437	15					5	1	8		2	1		
Knoxville, Tenn	36,346	15			9				4			3		
Lancaster, Pa	47,227		2		187						1			
Lexington, Ky	35,099	21	3		1						3	2	1	1
Lima, Ohio	30,508	7	5		1									
Lynchburg, Va	29,494	12	1		28						4	1	1	
Malden, Mass	44,404	11	1		14		2	1			1			
Montgomery, Ala	38,136	20			7							3		
Newcastle, Pa	36,280		4		1								1	
Newport, Ky	30,309	9					7				3	3	1	1
Newton, Mass	39,806	8			36		3	1				1		
Niagara Falls, N. Y	30,445	13			1							2		
Norristown, Pa	27,875	10	6		4		2					1		
Orange, N. J	29,630	11			3		1				2	1		
Pasadena, Cal	30,291	14										3		
Pittsfield, Mass	32,121	13	5		1						1	2	2	
Portsmouth, Va	33,190	7							1					
Racine, Wis	38,002	7	2				3			2				
Roanoke, Va	34,874	11			16		1				4	1	1	
Rockford, Ill	45,401	12	4				5					1	13	1
Salem, Mass	43,697	4			1		1		23					
San Diego, Cal	39,578	5							2		4	4		
South Omaha, Nebr	26,259	6												
Superior, Wis	40,384	13	1									1		
Taunton, Mass	34,259	15					1					1		
Waltham, Mass	27,834	10			33	1	1							
West Hoboken, N. J	35,403		3		1									
Williamsport, Pa	31,860	10			24							1		
Wilmington, N. C	25.748	11			15				7		1	1	1	1
York, Pa	44.750		3				2				6		1	
Zanesville, Ohio	28.026	10										2	2	
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23.833	4			4									
Ann Arbor, Mich	14.817	11			1		1							
Beaver Falls, Pa	12.191		2				3						2	
Braddock, Pa	17.759	8												
Cambridge, Ohio	11.327	2			1							1		
Camden, S. C					2									
Carbondale, Pa	17.040	7			5		6							
Clinton, Mass	13.075	3									1			
Columbus, Ga	20.554	4												
Columbus, Ind		2			1				4					
Concord, N. H	21.497	6			13									
Cumberland, Md	21.839	4			27								1	
Dunkirk, N. Y		4												
Galesburg, Ill	20.089	6									1	1		
Gloucester, Mass	24.398	8										1		
Harrison, N. J	14.498	4	1		1		1							
Homestead, Pa	18.710	6	2				1							
Kearny, N. J	18.659	10	1		21		1				1			
La Crosse, Wis		11	4				2							
La Fayette, Ind	20.081	8			2							2		
Lebanon, Pa	19.240		2								14			
Marinette, Mich	14.610	3					1						1	
Marlboro, Mass	14.577	6												
Massillon, Ohio		6												
Medford, Mass	23.156	10	1		51		1					2		
Melrose, Mass	15.715	2			12						1		1	
Moline, Ill	24.199	10					2					1		1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Apr. 13, 1912—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants—Continued.														
Montclair, N. J.	21.150	4	2		7						4			
Morristown, N. J.	12.507	4			9						1	2		
Nanticoke, Pa.	18.509	5												
Newburyport, Mass.	19,240	7									1	2		
North Adams, Mass.	22,012	8			3							1		
Northampton, Mass.	19,431	7	1		6								1	
Ottumwa, Iowa.	22,012	1												
Palmer, Mass.		4												
Plainfield, N. J.	22,050	7			25		2				2	1		
Pottstown, Pa.		6					1				1	3	1	
Saratoga Springs, N. Y.		7										1		
South Bethlehem, Pa.	19,973	10	2	2	7								1	
Steelton, Pa.	14,246	5	7		2							1		
Warren, Ohio.	11,081						2				1			
Wilkinsburg, Pa.	18,294	7									3			
Woburn, Mass.	15,308	3	2		9									

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

FLORIDA.—Week ended April 13, 1912. Reports from the State board of health show diphtheria present in 3 localities with 6 cases, malaria in 2 localities with 15 cases, tuberculosis in 7 localities with 14 cases, typhoid fever in 1 locality (Tampa) with 1 case.

INDIANA.—Month of February, 1912. Population, 2,700,876. Total number of deaths from all causes, 2,985, including diphtheria 29, measles 3, scarlet fever 14, tuberculosis 363, typhoid fever 41. Cases reported: Diphtheria 194 in 37 counties, scarlet fever 401 in 58 counties, smallpox 181 in 20 counties, typhoid fever 264 in 28 counties.

OKLAHOMA.—Month of February, 1912. Population, 1,657,155. Total number of deaths from all causes, 1,010, including diphtheria 12, scarlet fever 6, tuberculosis 78, typhoid fever 11. Cases reported: Diphtheria 93, scarlet fever 116, smallpox 64, tuberculosis 101, typhoid fever 50.

TEXAS.—Month of January, 1912. Population, 3,896,542. Total number of deaths from all causes, 3,295, including diphtheria 41, measles 3, scarlet fever 10, smallpox 4, tuberculosis 303, typhoid fever 43. Cases reported: Diphtheria 84, scarlet fever 235, smallpox 94, tuberculosis 46, typhoid fever 33.

FOREIGN AND INSULAR.

AUSTRALIA.

Sydney—Examination of Rats.

The following information was taken from bulletins issued by the department of health of New South Wales: During the four weeks ended March 16, 1912, 1,501 rats were examined for plague infection. No plague-infected rat was found.

The last case of human plague was reported May 29, 1909.

The last plague-infected rat was found April 25, 1910.

CUBA.

Transmissible Diseases.

The following statement of transmissible diseases in the island of Cuba was issued by the sanitary department:

MONTH OF MARCH, 1912.

Disease.	New cases.	Deaths.	Remaining under treatment.
Tuberculosis	146	244	1,507
Leprosy	1	3	346
Malaria	152	15	150
Typhoid fever	53	17	51
Diphtheria	55	11	9
Scarlet fever	31	0	19
Measles	120	1	48
Varicella	60	0	25
Tetanus in new born	18	18	1
Dengue	2	0	5

EGYPT.

Cairo—Typhus Fever.

Consul Belrose reports the occurrence of 9 deaths from typhus fever during the three weeks ended March 18, 1912.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911; a fatal case February 9, 1912; and 2 fatal cases February 25, 1912.

The last plague-infected rats reported found at Honokaa were 49, found during the week ended March 2, 1912. At Hilo, a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-prevention Work.

Chief Quarantine Officer Trotter reports:

Week ended Apr. 6, 1912.

Total rats and mongoose taken	415
Rats trapped	403
Mongoose trapped	12
Rats examined bacteriologically	351
Classification of rats trapped:	
Mus alexandrianus	49
Mus musculus	79
Mus norvegicus	39
Mus rattus	236
Average number of traps set daily	1,720

Mosquito-eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy, who is detailed as sanitary adviser to the governor of the Territory of Hawaii:

Mosquito-eradication measures conducted at Honolulu from Apr. 1 to 6, 1912, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Ordered cleaned.	Oiled.	Drained.	Emptied.	Filled.	Ordered repaired.	Screened.	Stocked with mosquito fish.
Gutters, house	1,020	9	53					8		
Gutters, street	203	26		77						
Standing water, holes, and low places	1,867	416		530			83		2	2
Privy vaults	981	4	3	25						
Cesspools	786	52		90				6		
Catch basins	569	34		366						
Leaky fixtures	57							48		
Water-holding plants	94									
Swamps	95	10		1	10					
Ponds	28		1							
Water barrels and troughs, tanks, tubs, or other receptacles	1,960	164	69	5		348			43	2
Tin cans and bottles	1,225	100				866				
Grease traps	245	5	5							

Number of rice plantations inspected	18
Number of loads of tin cans collected	42

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended March 16, 79 deaths from cholera and 106 from plague were reported at Calcutta; in all Bengal, 3,750 cases of plague, with 3,192 deaths; in all India, 18,011 cases of plague, with 15,401 deaths.

ITALY.

Examination of Emigrants.

Passed Asst. Surg. Robinson at Naples reports:

Vessels inspected at Naples and Palermo week ended Apr. 6.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Apr. 2	Luisiana	New York	1,101	60	1,350
3	Cincinnati	do	608	75	890
3	Duca d'Aosta	do	1,303	170	1,520
	Total		3,012	305	3,760

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Mar. 31	Procida	Norfolk			
Apr. 3	Athinai	New York			
4	Georgia	do			

MEXICO.

Typhus Fever.

At Aguascalientes Consul Schmutz reports the occurrence of 5 deaths from typhus fever during the 2 weeks ended April 14, 1912.

At Mexico City Vice Consul Guyant reports 100 cases with 17 deaths for the 2 weeks ended March 2, 1912.

NEW ZEALAND.

Auckland—Examination of Rats.

The following information was taken from bulletins issued by the department of public health of New Zealand:

During the 4 weeks ended March 2, 1912, 545 rats were examined for plague infection. No plague-infected rat was found.

The last plague-infected rat was found May 31, 1911.

RUSSIA.

Typhus Fever.

At Odessa Consul Grout reports the occurrence of 24 cases of typhus fever with 2 deaths during the week ended March 23, 1912.

At St. Petersburg Consul Conner reports 12 cases of typhus fever with 1 death for the week ended March 16, 1912.

WEST INDIES.

Trinidad—Plague.

Information received from Trinidad shows the occurrence of a case of plague at Port of Spain April 26.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING THE WEEK ENDED MAY 3, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Mar. 3-9	4	4	
Calcutta	Mar. 3-16	16	11	
Madras	Mar. 17-30	7	7	
Rangoon	Feb. 1-29	24	16	

YELLOW FEVER.

Brazil:				
Manaos	Mar. 24-30		5	
Pernambuco	Feb. 16-29		2	
Do	Mar. 1-15		2	

PLAGUE.

Arabia:				
Aden	Mar. 5-25	2	1	
Brazil:				
Para	Apr. 1-6	2	2	
Pernambuco	Feb. 16-29		1	
Egypt:				
Alexandria	Mar. 22	1		
Provinces—				
Assiout	Mar. 16-Apr. 4	5	2	
Behera	Apr. 16	1		
Beni Souef	Mar. 15	6		
Garbieh	Mar. 4-17	3	2	
Kena	Mar. 8-Apr. 4	43	34	
Minieh	Mar. 16-Apr. 4	9	1	
India:				
Bombay	Mar. 17-23	87	82	
Calcutta	Mar. 3-16		196	
Karachi	Mar. 17-30	147	131	
Rangoon	Feb. 1-29	86	84	
Java:				
Pasoeroean Residency	Mar. 10-16	6	5	
West Indies:				
Trinidad—				
Port of Spain	Apr. 26	1		

SMALLPOX.

Arabia:				
Aden	Mar. 19-25	1	1	
Austria-Hungary:				
Galicia	Mar. 25-30	14		
Vienna	do	1		
Brazil:				
Para	Apr. 1-6	1		
Pernambuco	Feb. 16-Mar. 15		97	
Rio de Janeiro	Feb. 25-Mar. 2	10		
Canada:				
Dawson	Apr. 1-6	1		
Hamilton	Apr. 14-20	8		
Quebec	do	6		
Winnipeg	Apr. 7-13	1		
Egypt:				
Cairo	Mar. 12-25	5		
France:				
Marseille	Mar. 1-31		1	
Paris	Apr. 1-6	3		
Germany	Apr. 1-7	12		
Hamburg	Apr. 1-6	2		
Great Britain:				
Liverpool	Apr. 7-17	1	1	
India:				
Madras	Mar. 17-30	25	11	
Rangoon	Feb. 1-29	117	28	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended May 3, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Italy:				
Naples	Apr. 7-13	3		
Palermo	Apr. 1-6	15	5	
Turin	Apr. 1-7	2		
Java:				
Batavia	Mar. 1-16	3		
Mexico:				
Guadalajara	Apr. 7-13	2	2	
Mexico	Feb. 18-Mar. 2	32	12	
Portugal:				
Lisbon	Apr. 1-13	3		
Russia:				
Moscow	Mar. 17-23	4	3	
Spain:				
Madrid	Mar. 1-31		13	
Seville	do		2	
Valencia	Apr. 7-13	18		
Teneriffe:				
Santa Cruz	Apr. 1-6		1	
Turkey in Asia:				
Beirut	Mar. 24-30	50		
Turkey in Europe:				
Constantinople	Apr. 1-7		13	

REPORTS RECEIVED FROM DEC. 30, 1911, TO APR. 26, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, vol. 1.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-Feb. 24	109	90	
Calcutta	Nov. 5-Mar. 2		773	
Madras	Nov. 26-Mar. 16	541	439	Madras Presidency, Nov. 1-Dec. 31; Cases, 10,436; deaths, 6,545. Jan. 1-Feb. 29: Cases, 18,267; deaths, 11,563.
Moulmine	Feb. 18-24	2	2	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Jan. 31	80	70	
Indo-China:				
Saigon	Nov. 20-Mar. 4	1,520	1,066	
Italy				Total June 8-Dec. 31: Cases 15,985; deaths, 6,022.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 26, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Italy—Continued.				
Provinces—				
Catanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands				Third quarter, 1911: Manila, 1 fatal case; Provinces, 27 cases and 22 deaths.
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Jan. 27		755	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2-Mar. 20	21	5	
Aleppo	Jan. 26-Mar. 9	36	23	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14-26	29		
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 26, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Mar. 23			Present.
Ceara	Jan. 1-Feb. 29		5	
Manaos	Nov. 19-Mar. 23		49	
Para	Mar. 3-9	2	2	Dec. 9-16: 1 fatal case.
Pernambuco	Jan. 1-Feb. 15		10	
Canal Zone:				
Culebra Island quarantine	Jan. 1-31	1		From a vessel from Guayaquil.
Chile:				
Tocopilla	Apr. 11	38	12	
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Feb. 29	13	6	
Guayaquil	Nov. 16-Feb. 29	118	54	
Huigra	Feb. 1-29			1 case.
Milagro	do	16	7	
Naranjito	do	2	2	
Yaguachi	do			1 case.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb. 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida	Nov. 12-Mar. 23	20	9	Total Aug. 1-Mar. 23: Cases, 65; deaths, 29.
Puerto Mexico (Coatzacoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Feb. 15	30	13	
Macuto	Mar. 16-19	1	1	
Maiquetia	Feb. 24-Mar. 9	3	1	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Azores:				
Fayal	Jan. 10			Still present.
Terceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Mar. 30	20	13	
Pernambuco	Oct. 1-Feb. 15		8	
Rio de Janeiro	Nov. 12-Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12-Mar. 27	21	11	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Chaochowfu	Mar. 10-16			Present.
Hongkong	Dec. 9-Mar. 9	50	44	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1,817; deaths, 1,324. Dec. 31-Feb. 3: Cases, 51; deaths, 48.
Pasoeroean Residency, Malang District.	Nov. 12-Mar. 2	104	61	
Soerobaya	Oct. 17-27	2		
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Reports not available because of revolution.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 26, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Provinces—				
Assiout	Jan. 1-Mar. 15	45	30	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	Jan. 1-Mar. 17	27	16	
Behera	Jan. 1-25	3	2	Sept. 11-16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16-Mar. 14	17	7	
Fayoum	Jan. 1-26	1		
Galioubeh	Jan. 1-Mar. 10	4	3	Oct. 5-Dec. 26: Cases, 1.
Garbieh	Jan. 1-Mar. 4	15	6	
Girgeh	Feb. 28	1	1	
Kena	Jan. 1-Mar. 7	26	17	Nov. 20-Dec. 13: Cases, 3; deaths 3.
Menouf	Feb. 2-Mar. 7	3	1	
Minieh	Jan. 1-Mar. 15	13	3	Dec. 13: Cases, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-Mar. 16	332	293	
Calcutta	Nov. 11-Mar. 2		293	
Karachi	Nov. 26-Mar. 16	400	337	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Jan. 31	80	74	
Bombay Presidency and Sind.	Oct. 29-Feb. 24	53,979	39,376	
Madras Presidency	do	9,171	7,166	
Bengal	do	22,567	18,954	
United Provinces	do	54,172	48,434	
Punjab	do	4,890	3,758	
Burma	do	1,042	939	
Eastern Bengal and Assam.	Jan. 1-Feb. 24	2	2	
Central Provinces	Oct. 29-Feb. 24	18,383	14,620	
Coorg	do	88	52	
Mysore State	do	8,162	6,309	
Hyderabad State	do	23,295	21,218	
Central India	do	7,496	6,187	
Rajputana and Ajmere Merwara.	do	950	772	
Kashmir	Feb. 3-23	38	19	
North West Province	Oct. 29-Feb. 24	2	2	Total for India, Oct. 29-Feb. 24: Cases, 204,237; deaths, 167,808. Total year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Mar. 4	33	5	
Japan:				
Formosa	Mar. 7-16	13	7	
Mauritius	Nov. 3-Feb. 22	70	36	
Persia:				
Bushire	Feb. 4-Mar. 2	31	14	
Peru:				
Departments—				
Callao	Oct. 1-21	1		City, in November, 1 case; in January, 3 cases with 2 deaths; Mar. 1-26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Mar. 13, 30 cases in the lazaretto at Trujillo.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on page 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Jan. 27		3	
South Africa:				
Durban	Jan. 14-Mar. 22			Total: Cases 23, deaths 18.
Straits Settlements:				
Singapore	Nov. 5-Feb. 24	27	24	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 26, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia:				
Basra	Feb. 13	1	1	A stoker on a vessel from Bushire.
Jiddah	Jan. 13-Mar. 13	9	5	
Venezuela:				
Caracas	Mar. 12	1		Apr. 22, present.
West Indies:				
Trinidad	Apr. 2-13	4		
At sea	Mar. 1-11	1	1	On s. s. Macedonia from Bombay to Aden.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Mar. 24	17	8	And vicinity.
Argentina:				
Buenos Aires	Jan. 1-31		2	Oct. 1-31, 6 deaths. No deaths in Nov. or Dec., 1911.
Rosario	Oct. 1-Jan. 31		40	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	2		
Budapest	Jan. 4-10	25		
Galicia	Dec. 24-Mar. 26	11	1	
Krain	Jan. 14-20	7		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-Mar. 9	3		
Brazil:				
Bahia	July 1-31		1	
Para	Mar. 24-30	1	1	From Alagoas.
Pernambuco	Oct. 1-Feb. 15		635	
Rio de Janeiro	Nov. 26-Feb. 24	18	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 16	5		
Nelson	Dec. 24-30	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-Apr. 6	2		
Nova Scotia—				
Halifax	Mar. 24-Apr. 6	2		
Ontario—				
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Mar. 23	91		
Sarnia	Oct. 17-Mar. 23	43		
Toronto	Jan. 6-Mar. 24	3	1	
Windsor	Feb. 4-Mar. 16	8		
Quebec—				
Montreal	Dec. 17-Apr. 13	24		
Quebec	Dec. 10-Apr. 13	270	2	
Ceylon:				
Colombo	Nov. 12-Feb. 10	3		And vicinity.
Chile:				
Iquique	Dec. 10-Mar. 16	4	2	
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Mar. 9	68		Feb. 17—Decreasing.
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chenghai	Jan. 29-Mar. 16			Present.
Chungking	Nov. 18-Mar. 9			Do.
Dalny	Mar. 3-23	9	2	
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-Mar. 9	558	414	
Kityang	Jan. 21-Mar. 16			Do.
Nanking	Dec. 10-Mar. 16			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 26, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12-Mar. 2	43	12	
Egypt:				
Cairo	Dec. 10-Mar. 11	5	1	
Port Said	Jan. 30-Feb. 4	1		
France:				
Havre	Mar. 10-16		4	
Marseille	Jan. 1-Feb. 29		4	Nov. 1-30, 1 death.
Paris	Dec. 3-Mar. 16	113	2	
Germany				Total, Dec. 31-Apr. 6: Cases, 89.
Hamburg	Jan. 21-27	1		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
Liverpool	Mar. 17-23	1		
London	Jan. 14-Apr. 6	8	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-Mar. 9	2		
India:				
Bombay	Nov. 19-Mar. 23	637	216	
Calcutta	Nov. 19-Mar. 16		26	
Madras	Nov. 26-Mar. 16	154	60	
Rangoon	Oct. 1-Jan. 31	103	27	
Indo-China:				
Saigon	Nov. 13-Mar. 4	37	7	
Italy:				
Genoa	Dec. 1-Mar. 15	45	2	
Leghorn	Dec. 16-Apr. 13	101	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-Mar. 30	94	1	
Palermo	Nov. 26-Mar. 23	2,599	885	
Turin	Jan. 15-Mar. 24	8		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Formosa	Mar. 3-16	3		
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	2	1	Jan. 20, 1 case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12-18	1		
Nogahama	Mar. 17-23	1		On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Apr. 6	6	2	
Juarez	Dec. 19-Mar. 9	14	5	
Magdalena	Dec. 23-Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-Mar. 19		11	Mar. 16, 25 cases in the lazaretto.
Mexico	Nov. 26-Feb. 17	135	67	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	Mar. 23, present in vicinity.
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Feb. 10	4	1	
Tampico	Dec. 1-Mar. 30		15	
Tapachula	Nov. 1-Jan. 31		18	
Philippine Islands				Third quarter, 1911: Manila, 9 cases; no deaths.
Portugal:				
Lisbon	Dec. 9-Mar. 20	52		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Apr. 26, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia:				
Batum	Dec. 1-31	1		
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Mar. 16	48	5	
Odessa	Nov. 26-Mar. 23	31	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-Jan. 27	16		Oct. 1-Nov. 30; deaths, 2.
St. Petersburg	Nov. 19-Mar. 23	170	36	
Warsaw	Nov. 5-Feb. 17	377	183	
Siam:				
Bangkok	Nov. 5-Jan. 27		1,326	
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-Feb. 24	4		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Barcelona	Feb. 6-12		1	
Cadiz	Nov. 1-Feb. 29		27	
Madrid	Dec. 1-Jan. 31		3	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-Feb. 29		8	
Valencia	Dec. 3-Apr. 6	353	16	
Straits Settlements:				
Penang	Feb. 11-17	1		
Singapore	Nov. 19-Mar. 2	32	11	
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Mar. 30		52	
Turkey in Asia:				
Beirut	Dec. 3-Mar. 23	1,425	107	
Turkey in Europe:				
Constantinople	Dec. 4-Mar. 24		128	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aden	Mar. 25	45,850	38	7				1						
Aguascalientes	Apr. 14	40,000	53	2					2				8	
Aix-la-Chapelle	Mar. 23	157,612	52	3					1			1	1	2
Amsterdam	Apr. 6	582,586	140	28						1				2
Asuncion	Feb. 17	75,000	28	2						6				
Do	Feb. 24		15	2						1				
Do	Mar. 2		33	2						1				
Barcelona	Mar. 30	591,272		29						3		6		
Beirut	Mar. 23	80,000	20	2				5						
Do	Mar. 30		20	2										
Birmingham	Apr. 6	842,512	226							2	3	2		20
Bombay	Mar. 16	979,445	851	53	65			46					8	
Do	Mar. 23	911,979	[illegible]	[illegible]	[illegible]			47					10	
Bordeaux	Apr. 6	253,000											3	[illegible]

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Bradford	Mar. 30	289,618	99	11								1	5	
Do	Apr. 6		79	5						2		1	4	
Bremen	Mar. 23	246,850	86	12								2	5	3
Budapest		1,000,000									2		1	
Cairo	Mar. 11	689,439	345	23					1	1		6		
Do	Mar. 18		395	24					4	1	1	6		
Calcutta	Mar. 2	890,493	524	36	69	85		2					1	
Do	Mar. 9		534	25	90	92							2	
Chemnitz	Mar. 16	299,000	66	6								2		
Cologne	Mar. 30	527,663	127	13							1		2	
Colombo	Mar. 16	227,026	133	18						4				
Dalny	Mar.1-16	45,539	20	1						1	1			
Do	Mar. 23		18	2				1			1			
Dublin	Mar. 30	406,536	236	29					1		1	6	7	2
Do	Apr. 6		205	34						2		4	11	2
Durban	Mar. 9	69,165	14	1						2				
Frankfort on the Main	Mar. 23	423,600	87								2	1		3
Georgetown	Mar. 30	57,577	53	6						2				
Glasgow	Apr. 12	785,600	255							1	2		15	3
Halifax	Apr. 13	46,000	26								1	2		
Havre	Mar. 30	136,159	61	18						2			1	
Do	Apr. 6		58	16									1	
Hongkong	Mar. 9	336,488			12			43		2				
Iquique	Mar. 16	40,000		5	1			1		1				
Karachi	..do	159,270	162		69								28	
Do	Mar. 23		144		63								21	
Kharput	..do	21,000		1						2			1	
Kingston	Apr. 20		14							1				
Kulangsu	Mar. 9	8,000								1				
Leeds	Apr. 6	445,568	133	14						1		2	1	1
Leghorn	Mar. 30	104,000	32											
Liege	..do	167,817	38	2									2	
Liverpool	Apr. 6	752,055	234	26							3	4	5	3
London	..do	7,340,125	1,689							6	1	15	25	30
Louisburg	Apr. 20	1,350	2									2		
Madras	Mar. 16	518,660	336			1		2					2	
Do	Mar. 23		331			1		5		3			4	
Manaos	Mar. 23	52,000	51	6			6							
Manchester	Apr. 6	714,427	253									4	24	12
Mannheim	Mar. 9	200,285	49	8								2		
Do	Mar. 16	200,285	56	9								1		1
Maracaibo	Apr. 5	50,000	17	2						1				
Mexico	Feb. 24	719,052	414	30				7			1	1	2	4
Do	Mar. 2		389	20				5	17			1	3	
Moncton	Apr. 13	11,345	6									1		
Montreal	..do	466,197	187	22						3	1	2		4
Moscow	Mar. 16	1,500,000	715	106				2		2	12	13	17	7
Nagasaki	Mar. 17	179,257	36	5								1		
Do	Mar. 24		44	7						1				
Nagaya	Mar. 16	424,655	142							2			2	
Newcastle-on-Tyne	Apr. 6	269,193	81	15										2
Nottingham	Mar. 30	260,000	76	4							2		6	1
Odessa	Mar. 23	575,000	31						2	1		1		
Para	..do	185,000	76	10				1						
Do	Mar. 30		99	11				2						
Paris	Mar. 23	2,888,110	988	174						3	6	8	45	6
Port Elizabeth	Mar. 9	30,692	15	3							1			
Do	Mar. 23		15	4						1				
Port Antonio	Apr. 6	49,190		1						1				
Quebec	Apr. 13	78,200		1										
Rangoon	Mar. 2	292,316	210	14	20	14		10						
Do	Mar. 9		225	11	16	15		17						
Do	Mar. 16		200	8	13	6		15						
Rotterdam	Apr. 6	437,870	111								1			
St. Johns, N. F.	Mar. 30	33,000										1		
Do	Apr. 13										1			
St. Petersburg	Mar. 23	1,907,708	813	153				7		8	11	4	20	14
Santa Cruz de Teneriffe	Mar. 30	46,000	8					4						
Shanghai	Mar. 10	500,000	217	12							3		[illegible]	
Do	Mar. 17		181	17							1		[illegible]	

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Sheffield	Mar. 30	455,000	143	12								1		
Do	Apr. 6		119	5						2				
Singapore	Feb. 24	303,328	163	25	1									
Do	Mar. 2		158	28				1		2				
Southampton	Apr. 6	120,896	33	4										2
South Shields	..do	109,676	38	7									1	1
Stettin	Mar. 30	240,000	63	7								1		
Stoke-on-Trent	Apr. 6	237,153	57	7								3	1	1
Talcahuana	Mar. 23	28,000												1
Trieste	..do	232,000	98									1	1	2
Turin	Mar. 31	430,770	154	13						2		2		1
Do	Apr. 7		163	20						1	1	1	1	1
Warsaw	Feb. 17	797,093	333	32				4		1	7	2	1	1
Valencia	Mar. 30	235,000	103	7				2				1		1
Vienna	Mar. 23	2,064,583	734	128						2	4	6	11	1
Vigo	Mar. 16	41,500	19	2								2		
Do	Mar. 30		18	3								1		
Do	Apr. 6		13	2								1		
West Hartlepool	Mar. 30	63,932	12							1				
Do	Apr. 6		15								1			
Vladivostok	Jan. 21 28	84,578	65	8						2	7			
Windsor	Apr. 20	17,918	7							2				
Winnipeg	Apr. 13	151,958	53	2							1	1		
Yokahama	Mar. 25	444,039										2		
Do	Apr. 1											1		

MORTALITY—FOREIGN AND INSULAR COUNTRIES AND CITIES (Untabulated).

BRAZIL—*Ceara.*—Month of February, 1912. Population, 60,000. Total number of deaths from all causes 176, including tuberculosis 15, typhoid fever 9, yellow fever 4.

Pernambuco.—Two weeks ended February 29, 1912. Population, 225,000. Total number of deaths from all causes 361, including plague 1, smallpox 49, yellow fever 2.

Two weeks ended March 15, 1912. Total number of deaths from all causes 395, including smallpox 48, typhoid fever 1, yellow fever 2.

CANADA—*Hamilton.*—Month of March, 1912. Population, 82,000. Total number of deaths from all causes not reported. The deaths include measles 1, tuberculosis 5.

FRANCE—*Calais.*—Month of March, 1912. Population, 75,000. Total number of deaths from all causes 110, including tuberculosis 26, typhoid fever 2.

St. Etienne.—Month of March, 1912. Population, 150,000. Total number of deaths from all causes 243, including diphtheria 3, scarlet fever 2, tuberculosis 41, typhoid fever 2.

GREAT BRITAIN.—Week ended March 30, 1912.

England and Wales.—The deaths registered in 94 great towns correspond to an annual rate r 1,000 of the population, which is estimated at 17,559,2

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 23.5 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Newtownards, viz, 5.7, and the highest at Cork, viz, 32.7 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 17 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Perth, viz, 8.7, and the highest at Greenock, viz, 25.4 per 1,000. The total number of deaths from all causes was 709, including diphtheria 3, measles 48, scarlet fever 7, typhoid fever 1.

INDIA—*Rangoon.*—Month of January, 1912. Population, 293,316. Total number of deaths from all causes 826, including plague 24, smallpox 10, tuberculosis 35, typhoid fever 2.

ITALY—*Messina.*—Month of March, 1912. Population, 127,000. Total number of deaths from all causes 123, including measles 2, scarlet fever 2, tuberculosis 5.

Milan.—Two weeks ended March 31, 1912. Population, 602,236. Total number of deaths from all causes 140, including diphtheria 4, measles 4, scarlet fever 3, tuberculosis 123, typhoid fever 3.

JAMAICA.—Month of March, 1912. Population, 52,000. Total number of deaths from all causes 180, including tuberculosis 24, typhoid fever 3.

NEW ZEALAND.—Month of January, 1912.

Auckland.—Population, 104,728. Total number of deaths 61, including measles 1, tuberculosis 5.

Christchurch.—Population, 82,004. Total number of deaths 62, including tuberculosis 4.

Dunedin.—Population, 65,690. Total number of deaths 59, including tuberculosis 2.

Wellington.—Population, 71,427. Total number of deaths 59, including tuberculosis 4.

SOUTH AFRICA—*Johannesburg.*—Month of February, 1912. Population, 237,220. Total number of deaths from all causes 160, including measles 2, tuberculosis 19, typhoid fever 7.

SPAIN—*Madrid.*—Month of March, 1912. Population, 584,117. Total number of deaths from all causes 1,255, including diphtheria 12, measles 13, scarlet fever 1, smallpox 13, tuberculosis 183, typhoid fever 10.

TAHITI.—Two weeks ended March 29, 1912. Population, 4,000. Total number of deaths from all causes 3. No deaths from contagious diseases.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

PUBLIC HEALTH REPORTS

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REPORT OF THE COMMISSION ON MILK STANDARDS APPOINTED BY THE NEW YORK MILK COMMITTEE.

INTRODUCTION.

PERSONNEL.

The New York Milk Committee, which is a voluntary organization working in the interests of improving the milk supply of New York City, in March, 1911, decided to appoint a commission on milk standards. The men who have served on the commission are as follows:

Dr. W. A. Evans, professor preventive medicine, Northwestern University; health editor, Chicago Tribune, Chicago, Ill., chairman.

Dr. B. L. Arms, director of bacteriological laboratory, department of health, Boston, Mass.

Dr. John F. Anderson, director of hygienic laboratory, United States Public Health and Marine-Hospital Service, Washington, D. C.

Prof. H. W. Conn, director of bacteriological laboratory, Connecticut State Board of Health, department of biology, Wesleyan University, Middletown, Conn.

Dr. E. C. Levy, health officer, Richmond, Va.

Dr. A. D. Melvin, Chief of Bureau of Animal Industry, United States Department of Agriculture, Washington, D. C.

Dr. William H. Park, director of laboratories, department of health of New York City, foot of East Sixteenth Street, New York City.

Mr. Raymond A. Pearson, commissioner of agriculture, Albany, N. Y.

Dr. M. P. Ravenel, director of hygienic laboratory, University of Wisconsin, Madison, Wis.

Prof. M. J. Rosenau, department of hygiene and preventive medicine, Harvard Medical School, Boston, Mass.

Prof. Henry C. Sherman, department of chemistry, Columbia University, New York City.

Dr. A. H. Stewart, antitoxin laboratories, department of health and charities, Philadelphia, Pa.

Dr. William Royal Stokes, bacteriologist to State and city health departments, Baltimore, Md.

Prof. William A. Stocking, department of dairy industry, Cornell University, Ithaca, N. Y.

Mr. Chester H. Wells, health officer, Montclair, N. J.

Dr. L. L. Van Slyke, department of chemistry, New York Agricultural Experiment Station, Geneva, N. Y.

Dr. Charles E. North, consulting sanitarian, member New York Milk Committee, New York City, secretary.

ORIGIN AND ORGANIZATION.

The appointment of this commission was the direct result of the observation of the New York Milk Committee that there was great incompleteness and lack of uniformity in the milk standards, milk ordinances, and rules and regulations of public-health authorities throughout the country for the control of public-milk supplies. There was a need that health officers be furnished conclusions drawn from large experience and mature judgment and that ordinances should be as free from erroneous positions and as uniform as possible.

A special committee of the New York Milk Committee was appointed to consider names of more than 200 men of prominence in medicine, sanitation, public health, and laboratory work, particulary those recognized as authorities on the milk question. Since regulations are based on standards and standards are based chiefly on laboratory analyses, the subcommittee selected 20 names of men distinguished for their knowledge of the bacteriological and chemical examination of milk and for the enforcement of standards based on such laboratory examinations. Two of those chosen declined to serve and another resigned after the first meeting, so that there were 17 members who have taken an active part in the work of the commission.

PURPOSES.

While this commission was created by and its expenses were borne by the New York Milk Committee, it has not been the intention of that committee that the commission should have the New York City milk problem solely in mind. It was desired that the commission should make recommendations that might be adopted by any city or town in the country.

MEETINGS.

The first meeting of the commission was held in the New York Academy of Medicine on May 22, 1911. The chief work of that meeting consisted in a general discussion of the scope of the commission's purpose and the appointment of a number of standing committees to which the several divisions of the work were assigned. The subjects included bacteriological standards, chemical standards, grades and classes of milk, standard ordinances, laws, and licenses, and new questions.

The second meeting of the commission was held at the New York Academy of Medicine on October 5 and 6, 1911, at which time the reports of the standing committees were received and modified, and the major part of them tentatively adopted. Special committees were appointed at this time to consider certain specific matters which were presented and final action on all matters was deferred until the third and final meeting.

The third and last meeting of the commission was held in Homer, N. Y., on January 25, and at the New York Academy of Medicine, January 26 and 27, 1912. The commission visited Homer in order that the members might inspect the central station and the dairy farms of the New York Dairy Demonstration Co. as a means of helping them to form a correct judgment of the relative value to be given to methods and equipment in the rules and regulations that they might recommend.

The commission voted to divide its report into a preamble of explanation and a report containing its resolutions regarding milk standards and rules and regulations.

PREAMBLE.

NEED OF MILK CONTROL.

Proper milk standards, while they are essential to efficient milk control by public health authorities and have as their object the protection of the milk consumer, are also necessary for the ultimate well-being of the milk industry itself. Public confidence is an asset of the highest value in the milk business. The milk producer is interested in proper standards for milk, since these contribute to the control of bovine tuberculosis and other cattle diseases and distinguish between the good producer and the bad producer. The milk dealer is immediately classified by milk standards, either into a seller of first-class milk or a seller of second-class milk, and such distinction gives to the seller of first-class milk the commercial rewards which he deserves, while it inflicts just penalties on the seller of second-class milk. For milk consumers, the setting of definite standards accompanied by proper labeling makes it possible to know the character of the milk which is purchased and to distinguish good milk from bad milk. In the matter of public health administration, standards are absolutely necessary to furnish definitions around which the rules and regulations of city health departments can be drawn, and the milk supply efficiently controlled.

PUBLIC HEALTH AUTHORITIES.

While public health authorities must necessarily see that the source of supply and the chemical composition should correspond with established definitions of milk as a food, their most important duty is to prevent the transmission of disease through milk. This means the control of infantile diarrhea, typhoid fever, tuberculosis, diphtheria, scarlet fever, septic throat infections, and other infectious diseases in so far as they are carried by milk.

SEPTIC SORE THROAT.

Septic sore throat deserves special mention because of the frequency in recent years with which outbreaks of this disease have been traced to milk supplies. The suggestion has been made that the infection of the milk is due to udder infection of the cow and on the other hand it has been suggested that it is due to contact with infected persons. The uncertainty can not be dispelled until cases of septic sore throat are regularly reported and tabulated by public health authorities. The commission therefore recommends that public health authorities make septic sore throat a reportable disease.

ECONOMIC PROBLEM.

The commission recognizes the magnitude of the milk industry, and that the improvement of milk supplies is primarily an economic problem. The success achieved by the experiment in milk production, which has been carried out on a very large scale by the New York Dairy Demonstration Co., is an illustration of the fact that an extra price or premium paid to the producer for cleanliness and care will bring results far more quickly and certainly than instructions or official inspection. But while the basic problem is economic, and must eventually be solved by commerce, public health authorities must show the way and must establish standards and regulations in the interest of consumers, the value of which even the consumers themselves often fail to appreciate.

LEGAL REQUIREMENTS.

A prime requisite of effectiveness is that local milk laws shall not exceed sanitary limitations. The commission has not entered into a discussion of fundamental State laws, but it recommends that State laws be amended wherever necessary in order that every municipality may have the legal right to adopt whatever ordinances it sees fit for the improvement of the milk supply. The commission advocates that local health laws be carefully drawn with regard to their legality under the general laws of the localities to which they apply, since a decision against a milk law in one locality is liable to be used as a precedent against milk laws elsewhere.

STANDARD RULES AND REGULATIONS.

The commission has drawn up a set of standard rules and regulations for the control of milk. These are the result of a study of the printed rules and regulations of the cities of the United States and of foreign countries and represent an immense amount of work on the part of the special committee of the commission to which the task was assigned. Some communities are in a position to adopt all of these rules and regulations at the present time, while other communities will be obliged to adopt a few rules at a time as public sentiment and local conditions warrant. It is realized that some of the rules may have to be modified to meet local conditions. It seems wise to the commission to divide the regulations into two parts: First, requirements, under which head are set down those provisions which are so fundamentally necessary that no community is justified in compromising on them; second, recommendations, under which head are set down provisions which are necessary for a good milk supply, but on which there can be a certain amount of latitude for compromise by those communities in which public sentiment is not ready to support more than a moderate degree of protection of human life.

ADMINISTRATIVE EQUIPMENT.

Another prime requisite is that the administrative departments shall be adequately equipped with men, money, and laboratory facilities. In smaller communities cooperation between local boards of health to the extent of exchanging reports would eliminate much duplication. Where a community can not maintain a laboratory it can enter into laboratory arrangements with other communities, and several can combine in the use of a common laboratory. Much of the expense of tuberculin testing can be borne by the National and State Governments. The commission is of the opinion that results can not be expected from laws where there is not sufficient appropriation and no machinery for their enforcement. On this subject the commission passed a resolution as follows:

> Whereas the appropriations generally made for the purposes of carrying on laboratory analyses of milk are now in most cases entirely inadequate: Therefore be it
>
> *Resolved*, That this commission recommends for the consideration of the authorities concerned an appropriation of funds commensurate with the importance of laboratory methods, which are of paramount importance in the hygienic control of the milk supply.

CLASSIFICATION OF MILKS.

There is no escape from the conclusion that milk must be graded and sold on grade, just as wheat, corn, cotton, beef, and other products are graded. The milk merchant must judge of the food value and also of the sanitary character of the commodity in which he deals. The high-grade product must get a better price than at present. The low-grade product must bring less. In separating milk into grades and classes the commission has endeavored to make its classification as simple as possible and at the same time to distinguish between milks which are essentially different in sanitary character.

In general two great classes of milk are recognized, namely, raw milk and pasteurized milk. Under these general classes there are different grades, as indicated in the report of the committee on classification.

PASTEURIZATION.

While the process of pasteurization is a matter which has attracted a great deal of attention in recent years, the commission has not entered into any discussion of its merits or demerits, but has given it recognition in its classification as a process necessary for the treatment of milk which is not otherwise protected against infection.

The commission thinks that pasteurization is necessary for all milk at all times excepting certified milk or its equivalent. The majority of the commissioners voted in favor of the pasteurization of all milk, including certified. Since this was not unanimous, the commission recommends that the pasteurization of certified milk be optional.

PASTEURIZING TEMPERATURES.

The destruction of the chemical constituents of milk by heat occurs at higher temperatures than those necessary for the destruction of the bacteria of infectious diseases transmissible by milk. (See chart in appendix.)

The commission passed a resolution regarding the temperature of pasteurization as follows:

> That pasteurization of milk should be between the limits of 140° F. and 155° F. At 140° F. the minimum exposure should be 20 minutes. For every degree above 140° F. the time may be reduced by 1 minute. In no case should the exposure be for less than 5 minutes.

In order to allow a margin of safety under commercial conditions, the commission recommends that the minimum temperature during the period of holding should be made 145° F. and the holding time 20 minutes. Pasteurization in bulk when properly carried out has proven satisfactory, but pasteurization in the final container is preferable.

LABELING AND DATING OF MILK.

The commission voted that all milk should be labeled and marked with the grade in which it is to be sold. In dating milk uniform methods should be adopted for all grades of both raw milk and pasteurized milk, both using the day of the week or both using the day of the month. All milk should be dated uniformly with the date of delivery to the consumer. Raw milk should not be dated with the date of production while pasteurized milk is dated with the date of pasteurization, since this places certified milk at a disadvantage by making it possible for pasteurized milk of a lower grade to carry a later date. The stamping on the label of the day of the week is sufficient for dating.

BACTERIA.

The subject of bacteria in milk received more attention than any other matter brought before the commission. The commission recognizes that bacteria in milk in the majority of instances indicate dirt, or lack of refrigeration, or age, while in the minority of instances the bacteria of disease may be present. The routine laboratory methods for examining milk have as their purpose only the control over dirt, refrigeration, and age, and it is a rare thing for a laboratory to undertake the examination of milk for the bacteria of disease. Milk with a high bacterial count is not necessarily harmful, but when used as a food, particularly for children, is a hazard too great to be warranted. Milk with a high bacteria count, therefore, should be condemned. Milks with small numbers of bacteria are presumed to be wholesome, unless there is reasonable ground for suspecting that they have been exposed to contagion.

BACTERIAL STANDARDS.

The commission recognizes the difficulty in interpreting bacterial counts. At times misleading conclusions have been drawn from such counts. In establishing the bacterial standards for a city it is always necessary to take into consideration the necessary age of the milk and in lesser measure the distance hauled and methods employed in its hauling. It will always be possible for a community which consumes milk produced on its own premises, or within 12 hours of its production, to insist upon and maintain a lower bacterial standard than can one where the milk is hauled many miles into town in a wagon, to be consumed within 24 hours after it is produced. In like manner this second type of city can always maintain a lower bacterial standard than a city where the general milk supply is hauled by railroad long distances and is several days old when consumed. In drawing conclusions as to the relative efficacy of milk control in cities comparisons must be made between cities of the same class.

The commission deems it of the utmost importance that some standard method should be adopted for estimating and comparing the bacterial character of milks, since by this means only is it possible to grade and classify milks and to enforce bacterial standards. There is much diversity of opinion as to the best method of valuing bacterial counts. The average of a series gives results which are misleading about as frequently as otherwise. In the average a single high figure may unduly overbalance a large number of exceedingly low counts. There are objections to the use of the "median" or middle number when the counts are arranged in order of size, for the reason that the middle figure does not distinguish between two groups in one of which there may be some very high counts above the median and in the other of which there are none. The method of dividing results into groups as recommended by the American Public Health Association, while a step in the right direction, is cumbersome and does not clearly indicate whether a milk conforms or not to a given bacterial standard. In this dilemma the commission has adopted some special methods of stating the results of bacterial counts. It recommends the use of a single figure, called "the bacterial content," as the means of determining whether a milk conforms to given bacterial standards and for determining the class to which milk belongs. These methods are described in detail in the appendix.

The bacterial standards given in the report are the work of a special committee of bacteriologists who considered all of the bacterial standards now in use. It is believed that the standards suggested are fair and wise and give full consideration to the state of the industry and of public-health control. The commission believes that the adoption and enforcement of these bacterial standards will be more effective than any other one thing in improving the sanitary character of public milk supplies. The enforcement of these standards can only be carried out by the regular and frequent laboratory examinations of milks for the numbers of bacteria they may contain.

CHEMICAL STANDARDS.

The chemical standards suggested are the work of a special committee, composed of chemists, which has carefully considered the natural composition of milk and the Federal and State standards already established. The standard of 3.25 per cent fat and 8.5 per cent solids, not fat, here proposed is in accordance with the recommendations of the Association of Official Agricultural Chemists and has been adopted by the United States Department of Agriculture and by a larger number of States than has any other standard. The simplification of the Babcock test makes the determination of fats and solids not fat an easy procedure quickly applied. Such chemical examinations of milk can be readily adopted and executed by any health board laboratory at a very moderate expense. It is believed that such chemical standards as are suggested will inflict no real hardship on the milk producers of this country and that the provision regarding substandard milks is a liberal one.

MICROSCOPIC EXAMINATION OF MILK.

Some of the special methods of milk examination recently devised having as their object the determination of the numbers of bacteria directly by the use of the microscope, the presence of pus by sedimentation and microscopical examination, and the presence of gross dirt by filtration were deemed of such importance that the subjects were assigned to a special committee. The committee has made extensive studies of these methods, which are the subject of a special report. (See appendix.)

PUBLICITY.

The commission fully considered the matter of the publication of laboratory examinations of milk by city and town health authorities. When proper standards and regulations are established and adequate facilities furnished for laboratory work, it is believed that the laboratory tests will give an index of the character of the milk delivered to the public by milk sellers which is entirely fair and impartial. There can be no objection to publicity under such circumstances. It is an advantage to the seller of high-grade milk. It is an advantage to the consumer who desires to select a high-grade milk. It has much educational value both to producer and consumer. Therefore the commission recommends "that the reports of laboratory analyses of milk made by departments of health be regularly published."

REPORT.

CLASSIFICATION OF MILK.

Milk should be graded and classified. The classification should be the same for both large and small cities and towns. Milk should be graded into four classes, as follows:

Class A.—Certified milk or its equivalent.
Class B.—Inspected milk.
Class C.—Pasteurized milk.
Class D.—Milk not suitable for drinking purposes.

Class A. *Certified milk or its equivalent.*—The use of the term certified should be limited to milk produced in conformity with the requirements of the American Association of Certified Milk Commissions.

Milk of an equivalent character should conform to the following requirements: It should be produced at dairies subjected to periodic inspection and the products of which are subject to frequent analyses. The cows producing such milk must be properly fed and watered, free from tuberculosis as shown by the tuberculin test and phyiscal examination by a qualified veterinarian, and from all other communicable diseases, and from diseases and conditions whatsoever likely to deteriorate the milk. They must be housed in clean, properly ventilated stables of sanitary construction, and must be kept clean. All persons who come in contact with the milk must exercise scrupulous cleanliness and must not harbor the germs of typhoid fever, tuberculosis, diphtheria, dysentery, scarlet fever, and septic throat infections, or other infections liable to be conveyed by the milk. Milk must be drawn under all precautions necessary to avoid infection, and be immediately strained and cooled, placed in sterilized bottles, and kept at a temperature not exceeding 50° F. until delivered to the consumer. Pure water, as determined by inspection and chemical and bacteriological examination, is to be provided for use throughout the dairy farm and dairy. Milk of this class should contain less than 10,000 bacteria per cubic centimeter, and should not be more than 28 hours old when delivered.

Class B. *Inspected milk.*—This class should consist of clean raw milk from healthy cows, as determined by the tuberculin test and physical examination by a qualified veterinarian, and from dairies that score not less than 70 on the Government score card. The cows are to be fed, watered, housed, and milked under good conditions, but not necessarily equal to the conditions prescribed for class A. All persons who come in contact with the milk must exercise scrupulous cleanliness and must not harbor the germs of typhoid fever, tuberculosis, diphtheria, or other infectious diseases liable to be conveyed by milk. This milk is to be delivered in sterilized containers and is to be kept at a temperature not exceeding 50° F. until it reaches the consumer. It should contain less than 100,000 bacteria per cubic centimeters. Pasteurization of milk of this class is optional. If pasteurized it shall then be designated as "pasteurized inspected milk."

Class C. *Pasteurized milk.*—Milk from dairies not able to comply with the requirements specified for classes A and B should be pasteurized under official supervision before being sold, and should be sold under the designation "pasteurized milk." Milk for pasteurization should be kept at a temperature not exceeding 50° F. at all times while in transit from the dairy farm to the pasteurizing plant. After pasteurization it should be placed in sterilized containers (if not pasteurized in such containers) and should be cooled at once to 50° F. and kept below that temperature until delivered to the consumer. No cows in any way unfit for the production of milk for use by man, as determined by physical examination, shall be permitted to remain in any dairy producing milk of class C. Such milk before pasteurization should contain less than 1,000,000 bacteria per cubic centimeter, and after pasteurization less than 50,000, and it should not contain colon bacilli in 1 cubic centimeter as determined by cultural methods. Pasteurized milk should be delivered to the consumer within less than 48 hours after pasteurization. The repasteurization of milk should be prohibited.

Class D. *Milk not suitable for drinking purposes.*—Milk containing over 1,000,000 bacteria per cubic centimeter, or from farms scoring less than 40 per cent, may be allowed to be sold for cooking and industrial purposes only after having been pasteurized or heated to a higher temperature. Such milk should be delivered in a distinctive container, and should not be allowed to be sold for drinking purposes.

CLASSIFICATION OF CREAM.

Cream should be classified into the same grades as milk, in accordance with the requirements for the grades of milk, with special bacterial standards which should not exceed 30,000 per cubic centimeter in the case of grade A, and 300,000 per cubic centimeter in the case of grade B. Bacterial limits for grades C and D can not at the present time be specified.

BACTERIOLOGICAL STANDARDS.

Class A milk shall contain less than 10,000 bacteria per cubic centimeter.

Class B milk shall contain less than 100,000 bacteria per cubic centimeter.

Class C milk shall contain less than 1,000,000 bacteria per cubic centimeter before pasteurization and less than 50,000 bacteria per cubic centimeter after pasteurization, and should not contain colon bacilli in 1 cubic centimeter as determined by cultural methods.

On the subject of laboratory examinations of milk for bacteria, the commission passed the following resolutions:

1. That the interests of public health demand that the control of milk supplies shall include regular laboratory examinations of milk by bacteriological methods.
2. That among present available routine laboratory methods for determining the sanitary quality of milk the bacteria count occupies first place.
3. That bacteriological standards should be a factor in classifying or grading milks of different degrees of excellence.
4. That bacteriological examinations of milk are of importance at every stage of production and distribution, but that in the establishment of grades and classes of raw milk such grades and classes should be based on the bacterial content of milk as offered for sale.
5. That there should be bacteriological standards for milk before it is pasteurized and for milk after it is pasteurized.
6. That the bacteria count of milk indicates its quality and history as it is modified by unusual contamination, improper handling, dirt, improper refrigeration, or age. The high count indicates the necessity of investigation and inspection in order that remedies may be applied.
7. That there be adopted as standards for making the bacteria count the standard methods of the American Public Health Association, laboratory section, recommending, however, the following amendments:
    - A. The methods of taking samples for laboratory tests for bacterial counts should be the same and uniform for all grades and classes of milk.
    - B. That 1½ per cent agar be used instead of 1 per cent agar.
    - C. That incubation of plate cultures be made at 37° C. for 48 hours, and that there be no option.
    - D. That the minimum number of bacteria tests of milk necessary to warrant the publication of results be made four consecutive bacteria counts of separate samples within a period of not more than four weeks.

CHEMICAL STANDARDS.

Cow's milk.—Standard milk should contain not less than 8.5 per cent of milk solids not fat and not less than 3.25 per cent of milk fat.

Skim milk.—Standard skim milk should contain not less than 8.75 per cent of milk solids.

Cream.—Standard cream contains not less than 18 per cent of milk fat and is free from all constituents foreign to normal milk. The percentage of milk fat in cream over or under that standard should be stated on the label.

Buttermilk.—Buttermilk is the product that remains when fat is removed from milk or cream, sweet or sour, in the process of churning. Standard buttermilk contains not less than 8.5 per cent of milk solids. When milk is skimmed, soured, or treated so as to resemble buttermilk, it should be known by some distinctive name.

HOMOGENIZED MILK OR CREAM.

The commission is of the opinion that in the compounding of milk no fats other than milk fats from the milk in process should be used and that no substance foreign to milk should be added to it. The commission is opposed to the use of condensed milk or other materials for the thickening of cream unless the facts are clearly set forth on the label of the retail package. Regarding the process of homogenizing the commission resolved as follows:

That homogenized milk or cream should be so marked, stating the percentage of fat [illegible] contains.

ADJUSTED MILKS.

On the question of milks and creams in which the ratio of the fats to the solids not fat has been changed by the addition to or subtraction of cream or milk fat the commission has hesitated to take a position. On the one hand they are in favor of every procedure which will increase the market for good milk and make the most profitable use of every portion of it. On the other, they recognize the sensitiveness of milk, the ease with which it is contaminated, and the difficulty of controlling, standardizing, skimming, homogenizing, souring, etc., so that contaminations do not occur and inferior materials are not used. On this subject the commission passed a resolution presented by a special committee as follows:

> Milk in which the ratio of the fats to the solids not fat has been changed by the addition to or subtraction of cream should be labeled "adjusted milk;" the label should show the minimum guaranteed percentage of fat and should comply with the same sanitary or chemical requirements as for milk not so standardized or modified.

REGULATION OF MARKET MILK ON BASIS OF GUARANTEED PERCENTAGE COMPOSITION.

1. Sellers of milk should be permitted choice of one of two systems in handling market milk. Milk can be sold, first, under the regular standard, or, second, under a guaranteed statement of composition.
2. Any normal milk may be sold if its per cent of fat is stated. In case the per cent of fat is not stated, the sale will be regarded as a violation unless the milk contains at least 3.25 per cent of milk fat.
3. As a further protection to consumers, it is desirable that when the guaranty system is used there be also a minimum guaranty of milk solids not fat of not less than 8.5 per cent.
4. Dealers electing to sell milk under the guaranty system should be required to state conspicuously the guaranty on all containers in which such milk is handled by the dealer or delivered to the consumer.
5. The sale of milk on a guaranty system should be by special permission obtained from some proper local authority.

STANDARD RULES FOR THE PRODUCTION, HANDLING, AND DISTRIBUTION OF MILK.

As a basis for the promulgation of rules and recommendations governing the production, handling, and distribution of milk, it is recognized that we have to deal with two kinds of milk, raw and pasteurized, although there may be several grades of each of these two kinds. In order for any grade to be safe, it is recommended that the regulations herein set forth under the heading "Requirements" should be enforced. The regulations herein set forth under the heading "Recommendations" should be adopted wherever practicable as a means of improving the milk supply above the actual point of safety. (The term "milk" shall be construed to include the fluid derivatives of milk wherever such construction of the term is applicable.)

LICENSES.

REQUIREMENTS.

No person shall engage in the sale, handling, or distribution of milk in ——— until he has obtained a license therefor from the health authorities. This license shall be renewed on or before the 1st day of ——— of each year and may be suspended or revoked at any time for cause.

RECOMMENDATIONS.

The application for the license shall include the following statements:

(1) Kind of milk to be handled or sold.

(2) Names of producers with their addresses and permit numbers.

(3) Names of middlemen with their addresses.

(4) Names and addresses of all stores, hotels, factories, and restaurants at which milk is delivered.

(5) A statement of the approximate number of quarts of milk, cream, buttermilk, and skim milk sold per day.

(6) Source of water supply at farms and bottling plants.

(7) Permission to inspect all local and out-of-town premises on which milk is produced and handled.

(8) Agreement to abide by all the provisions of State and local regulations.

PERMITS.

REQUIREMENTS.

No person shall engage in the production of milk for sale in ——, nor shall any person engage in the handling of milk for shipment into ——— until he has obtained a permit therefor from the health authorities. This permit shall be renewed on or before the 1st day of ——— of each year and may be suspended or revoked at any time for cause.

Raw Milk.

COW STABLES.

REQUIREMENTS.

1. They shall be used for no other purpose than for the keeping of cows, and shall be light, well ventilated, and clean.
2. They shall be ceiled overhead if there is a loft above.
3. The floors shall be tight and sound.
4. The gutters shall be water-tight.

RECOMMENDATIONS.

1. The window area shall be at least 2 square feet per 500 cubic feet of air space and shall be uniformly distributed, if possible. If uniform distribution is impossible, sufficient additional window area must be provided so that all portions of the barn shall be adequately lighted.
2. The amount of air space shall be at least 500 cubic feet per cow, and adequate ventilation besides windows shall be provided.
3. The walls and ceilings shall be whitewashed at least once every six months, unless the construction renders it unnecessary, and shall be kept free from cobwebs and dirt.
4. All manure shall be removed at least twice daily and disposed of so as not to be a source of danger to the milk either as furnishing a breeding place for flies or otherwise.
5. Horse manure shall not be used in the cow stable for any purpose.

MILK ROOM.

REQUIREMENTS.

Every milk farm shall be provided with a milk room that is clean, light, and well screened. It shall be used for no other purpose than for the cooling, bottling, and storage of milk and the operations incident thereto.

RECOMMENDATIONS.

1. It shall have no direct connection with any stable or dwelling.
2. The floors shall be of cement or other impervious material, properly graded and drained.
3. It shall be provided with a sterilizer unless the milk is sent to a bottling plant, in which case the cans shall be sterilized at the plant.
4. Cooling and storage tanks shall be drained and cleaned at least twice each week.
5. All drains shall discharge at least 100 feet from any milk house or cow stable.

COWS.

REQUIREMENTS.

1. A physical examination of all cows shall be made at least once every six months by a veterinarian approved by the health authorities.
2. Every diseased cow shall be removed from the herd at once and no milk from such cows shall be offered for sale.
3. The tuberculin test shall be applied at least once a year by a veterinarian approved by the health authorities.
4. All cows which react shall be removed from the herd at once, and no milk from such cows shall be sold as raw milk.
5. No new cows shall be added to a herd until they have passed a physical examination and the tuberculin test.
6. Cows, especially the udders, shall be clean at the time of milking.
7. No milk that is obtained from a cow within 15 days before or 5 days after parturition, nor any milk that has an unnatural odor or appearance, shall be sold.
8. No unwholesome food shall be used.

RECOMMENDATIONS.

1. Every producer shall allow a veterinarian employed by the health authorities to examine his herd at any time under the penalty of having his supply excluded.
2. Certificates showing the results of all examinations shall be filed with the health authorities within 10 days of such examinations.
3. The tuberculin tests shall be applied at least once every six months by a veterinarian approved by the health authorities, unless on the last previous test no tuberculosis was present in the herd or in the herds from which new cows were obtained, in which event the test may be postponed an additional six months.
4. Charts showing the results of all tuberculin tests shall be filed with the health authorities within 10 days of the date of such test.
5. The udders shall be washed and wiped before milking.

EMPLOYEES.

REQUIREMENTS.

1. All employees connected in any way with the production and handling of milk shall be personally clean and shall wear clean outer garments.
2. The health authorities shall be notified at once of any communicable disease in any person that is in any way connected with the

production or handling of milk, or of the exposure of such person to any communicable disease.

3. Milking shall be done only with dry hands.

RECOMMENDATIONS.

1. Clean suits shall be put on immediately before milking.

2. The hands shall be washed immediately before milking each cow, in order to avoid conveyance of infection to the milk.

UTENSILS.

REQUIREMENTS.

1. All utensils and apparatus with which milk comes in contact shall be thoroughly washed and sterilized, and no milk utensil or apparatus shall be used for any other purpose than that for which it was designed.

2. The owner's name, license number, or other identification mark, the nature of which shall be made known to the health authorities, shall appear in a conspicuous place on every milk container.

3. No bottle or can shall be removed from a house in which there is, or in which there has recently been, a case of communicable disease until permission in writing has been granted by the health authorities.

4. All metal containers and piping shall be in good condition at all times. All piping shall be sanitary milk piping, in couples short enough to be taken apart and cleaned with a brush.

5. Small-top milking pails shall be used.

RECOMMENDATIONS.

1. All cans and bottles shall be cleaned as soon as possible after being emptied.

2. Every conveyance used for the transportation or delivery of milk, public carriers excepted, shall bear the owner's name, milk-license number, and business address in uncondensed gothic characters at least 2 inches in height.

MILK.

REQUIREMENTS.

1. It shall not be strained in the cow stable, but shall be removed to the milk room as soon as it is drawn from the cow.

2. It shall be cooled to 50° F. or below within two hours after it is drawn from the cow and it shall be kept cold until it is delivered to the consumer.

3. It shall not be adulterated by the addition to or the subtraction of any substance or compound, except for the production of the fluid derivatives allowed by law.

4. It shall not be tested by taste at any bottling plant, milk house, or other place in any way that may render it liable to contamination.

5. It shall be bottled only in a milk room or bottling plant for which a license or permit has been issued.

6. It shall be delivered in bottles, or single service containers, with the exception that 20 quarts or more may be delivered in bulk in the following cases:

(*a*) To establishments in which milk is to be consumed or used on the premises.

(*b*) To infant-feeding stations that are under competent medical supervision.

7. It shall not be stored in or sold from a living room or from any other place which might render it liable to contamination.

RECOMMENDATIONS.

1. It shall be cooled to 50° F. or below immediately after milking and shall be kept at or below that temperature until it is delivered to the consumer.
2. It shall contain no visible foreign material.
3. It shall be labeled with the date of production.

RECEIVING STATIONS AND BOTTLING PLANTS.

REQUIREMENTS.

1. They shall be clean, well screened, and lighted, and shall be used for no other purpose than the proper handling of milk and the operations incident thereto, and shall be open to inspection by the health authorities at any time.
2. They shall have smooth, impervious floors, properly graded and drained.
3. They shall be equipped with hot and cold water and steam.
4. Ample provision shall be made for steam sterilization of all utensils, and no empty milk containers shall be sent out until after such sterilization.
5. All utensils, piping, and tanks shall be kept clean and shall be sterilized daily.

RECOMMENDATIONS.

1. Containers and utensils shall not be washed in the same room in which milk is handled.

STORES.

REQUIREMENTS.

1. All stores in which milk is handled shall be provided with a suitable room or compartment in which the milk shall be kept. Said compartment shall be clean and shall be so arranged that the milk will not be liable to contamination of any kind.
2. Milk shall be kept at a temperature not exceeding 50° F.

RECOMMENDATIONS.

1. Milk to be consumed off the premises may be sold from stores only in the original unopened package.

GENERAL REGULATIONS.

REQUIREMENTS.

1. The United States Bureau of Animal Industry score card shall be used, and no milk from a dairy that scores below 70 on such card shall be sold.
2. Every place where milk is produced or handled and every conveyance used for the transportation of milk shall be clean.

3. All water supplies shall be from uncontaminated sources and from sources not liable to become contaminated.

4. The license or permit shall be kept posted in a conspicuous place in every establishment for the operation of which a milk license or permit is required.

5. No milk license or permit shall at any time be used by any person other than the one to whom it was granted.

6. No place for the operation of which a license or permit is granted shall be located within 100 feet of a privy or other possible source of contamination, nor shall it contain or open into a room which contains a water-closet.

7. No skim milk or buttermilk shall be stored in or sold from cans or other containers unless such containers are of a distinctive color and permanently and conspicuously labeled "skim milk" or "buttermilk," as the case may be.

8. No container shall be used for any other purpose than that for which it is labeled.

RECOMMENDATIONS.

1. Ice used for cooling purposes shall be clean and uncontaminated.

2. No person whose presence is not required shall be permitted to remain in any cow stable, milk house, or bottling room.

SUBNORMAL MILK.

REQUIREMENTS.

1. Natural milk that contains less than 3.25 per cent, but more than 2.5 per cent milk fat, and that complies in all other respects with the requirements above set forth, may be sold, provided the percentage of fat does not fall below a definite percentage that is stated in a conspicuous manner on the container; and further provided that such container is conspicuously marked "substandard milk."

CREAM.

REQUIREMENTS AND RECOMMENDATIONS.

1. It shall be obtained from milk that is produced and handled in accordance with the provisions hereinbefore set forth for the production and handling of milk.

STANDARDS FOR MILK.

REQUIREMENTS.

1. It shall not contain more than 100,000 bacteria per cubic centimeter.

2. It shall contain not less than 3.25 per cent milk fat.

3. It shall contain not less than 8.5 per cent solids not fat.

RECOMMENDATIONS.

1. The bacterial limit shall be lowered if possible.

STANDARDS FOR CREAM.

REQUIREMENTS.

1. It shall not contain more than 300,000 bacteria per cubic centimeter.
2. It shall contain not less than 18 per cent milk fat.

RECOMMENDATIONS.

Same as above for milk.

STANDARDS FOR SKIM MILK.

REQUIREMENTS.

1. It shall contain not less than 8.75 per cent milk solids.
2. Control of sale of skim milk: Whether skim milk is sold in wagons or in stores, all containers holding skim milk should be painted some bright, distinctive color and prominently and legibly marked "skim milk." When skim milk is placed in the buyer's container, a label or tag bearing the words "skim milk" should be attached.

PASTEURIZED MILK.

Pasteurized milk is milk that is heated to a temperature of not less than 140° F. for not less than 20 minutes, or not over 155° F. for not less than 5 minutes, and for each degree of temperature over 140° F. the length of time may be 1 minute less than 20. Said milk shall be cooled immediately to 50° F. or below and kept at or below that temperature.

COW STABLES.

REQUIREMENTS.

The same as for the production of raw milk.

RECOMMENDATIONS.

The same as for the production of raw milk.

MILK ROOM.

REQUIREMENTS.

The same as for the production of raw milk.

RECOMMENDATIONS.

The same as for the production of raw milk.

COWS.

REQUIREMENTS.

The same as for the production of raw milk, with the exception of the sections relating to the tuberculin test.

RECOMMENDATIONS.

That no cows be added to a herd excepting those found to be free from tuberculosis by the tuberculin test.

EMPLOYEES.

REQUIREMENTS.

The same as for the production of raw milk.

RECOMMENDATIONS.

The same as for the production of raw milk.

UTENSILS.

REQUIREMENTS.

The same as for the production of raw milk.

RECOMMENDATIONS.

The same as for the production of raw milk.

MILK FOR PASTEURIZATION.

REQUIREMENTS.

1. The same as for the production of raw milk, with the exception of sections 1, 2, and 6*b*.
2. It shall be cooled to 60° F. or below within two hours after it is drawn from the cow, and it shall be held at or below that temperature until it is pasteurized. After pasteurization, it shall be held at a temperature not exceeding 50° F. until delivered to the consumer.
3. Pasteurized milk shall be distinctly labeled as such, together with the temperature at which it is pasteurized, and the shortest length of exposure to that temperature and the date of pasteurization.

RECOMMENDATIONS.

1. No milk shall be repasteurized.
2. The requirements governing the production and handling of milk for pasteurization should be raised wherever practicable.

PASTEURIZING PLANTS.

REQUIREMENTS.

The same as under "Receiving stations and bottling plants" for raw milk.

RECOMMENDATIONS.

The same as under "Receiving stations and bottling plants" for raw milk.

STORES.

REQUIREMENTS.

The same as for raw milk.

RECOMMENDATIONS.

The same as for raw milk.

GENERAL REGULATIONS.

REQUIREMENTS.

1. The same as for raw milk with the exception that the minimum dairy score shall be 40, and no milk from a dairy that scores below 40 shall be pasteurized for sale, except for industrial purposes.
2. Milk from cows that have been rejected by the tuberculin test, but which show no physical signs of tuberculosis, as well as those which have not been tested, may be sold provided that it is produced and handled in accordance with all the other requirements herein set forth for pasteurized milk.
3. Ice used for cooling purposes shall be clean.

RECOMMENDATIONS.

The same as for raw milk.

PASTEURIZED CREAM.

REQUIREMENTS.

1. It shall be obtained only from milk that could legally be sold as milk under the requirements hereinbefore set forth.
2. Pasteurized cream, or cream separated from pasteurized milk, shall be labeled in the manner herein provided for the labeling of pasteurized milk.

STANDARDS FOR PASTEURIZED MILK.

REQUIREMENTS.

1. It shall not contain more than 1,000,000 bacteria per cubic centimeter before pasteurization, nor over 50,000 when delivered to the consumer, and no colon bacilli in 1 cubic centimeter as determined by cultural methods.
2. The standards for the percentage of milk fat and of total solids shall be the same as for raw milk.

RECOMMENDATIONS.

1. The limits for the bacterial count before pasteurization and after pasteurization should both be lowered if possible.

STANDARDS FOR PASTEURIZED CREAM.

REQUIREMENTS.

1. No cream shall be sold that is obtained from pasteurized milk that could not be legally sold under the provisions herein set forth, nor shall any cream that is pasteurized after separation contain an excessive number of bacteria.
2. The bacterial count of pasteurized cream shall not exceed 100,000 bacteria per cubic centimeter when delivered to the consumer.
3. The percentage of milk fat shall be the same as for raw cream.

Penalty.

Every milk ordinance should contain a penalty clause.

APPENDIX.

REPORT OF THE COMMITTEE UPON THE MICROSCOPIC EXAMINATION OF MILK AND UPON THE DETERMINATION OF THE DIRT IN MILK.

Inasmuch as the subjects referred to this committee are in some respects new to some members of the commission, the report of this committee is presented in two parts. In the first part are given the important facts concerning the method and the utility of a microscopic examination of milk, and in the second part are presented a few resolutions for consideration by the committee. The data upon which this report is based is partly derived from special work by members of the committee and partly from correspondence and published papers. Letters have been addressed to all laboratories where these methods have been in use, so far as the addresses could be obtained, and from the replies received the following conclusion has been reached:

1. The microscopic examination of raw milk has been somewhat widely adopted, but apparently only in a few places has it been extensively used. In at least two laboratories where it has been tried, it has been given up as unreliable; but in general those who have used the method most are most enthusiastic as to its value.

2. There are two different methods of making a microscopic examination of milk:

(*a*) The use of centrifugal machine by the Stewart-Slack method. This method involves the centrifugalization of 1 or 2 cubic centimeters of milk and smearing of the sediment upon a slide, subsequently staining the same, and is so well known that it is unnecessary to describe it in detail here. It is the method that has been most commonly used. The results of this method vary considerably with details of individual manipulation, with the speed of the centrifugal machine, with the time allowed for centrifugalization, and with other individual factors. As a result, findings of one laboratory can not be commonly compared accurately with those of another, but they are fairly uniform when compared with each other.

(*b*) The direct examination of milk by the Prescott-Breed method. The details of this method are found in the Cent. f. Bact. 11, XXX, p. 337, 1911, but since it is somewhat new a brief description of it will be here given. A capillary tube is prepared, arranged to receive a rubber bulb at one end and marked carefully to deliver one one-hundredth of a cubic centimeter. After a most thorough mixing of the milk, one one-hundredth of a cubic centimeter is removed with the sterilized pipette and spread uniformly over a square centimeter on an ordinary microscopic slide. It is allowed to dry and is fixed with methyl alcohol, after which the fat is dissolved from it by the use of xylol. The smear is then stained either with methyline blue or preferably with one of the blood stains, the Jenner stain or Wright stain being useful for this purpose. If the staining is so deep as to make the specimen too opaque for proper study, it is slightly decolorized with alcohol which removes the stain from the general sediment more readily than it does from the bacteria or the tissue cells. The stained smear is studied under a twelve-inch immersion. The draw tube of the immersion is adjusted so that the field of the miscroscope covers exactly 15 millimeters and under these circumstances the number of bacteria present in the one one-hundredth of a cubic centimeter is exactly 5,000 times the number found in a microscopic field. The counting of a large number of fields (100 fields) and averaging the results multiplied by this number will therefore give approximately the number of cells or bacteria contained in a one one-hundredth cubic centimeter of milk.

This method has the advantage of eliminating all of the errors that are associated with the irregularity in the action of the centrifugal machine and many of the other individual errors connected with the Stewart-Slack method. On the other hand, it has the disadvantage of examining only a small quantity of milk, one one-hundredth of a cubic centimeter being hardly a fair sample. This disadvantage, however, may be met by making a very thorough mixture of the milk before sampling and by making the examination in duplicate. A second disadvantage is the large multiplier that has to be used to reduce the results to 1 cubic centimeter. This, of course, very greatly increases any error that may appear in the observation and introduces an error the extent of which can not yet be stated accurately. It may in a measure be met by making the examination in duplicate and by averaging a large number of plate counts.

3. The chief advantages derived from the microscopic examination of milk are due to the quickness of the method:

(*a*) It makes possible the rapid discarding of poor samples of milk, since reports upon it are possible within a very short time.

(*b*) The quickness with which an examination can be made makes it possible for a single laboratory to examine many more samples of milk than by the older plate method, one person being able to examine and report upon 50 to 100 samples in a half day, and to make the reports upon the same day that the milk is collected.

4. The microscopic study of milk gives information upon the following points:

(*a*) The abundance of cells which are present in the milk.

(*b*) The clumping of these cells, which is frequently noticeable in the centrifugal slime but which is rarely if ever seen in milk that is examined by the direct method above mentioned.

(*c*) The bacterial count.

(*d*) The presence of chain-forming streptococci (in this report when the term streptococci is used, reference is made to chain-forming organisms with at least six elements in a chain).

(*e*) General information concerning the nature of the dirt and the source of the bacteria in the milk. With a little experience one can distinguish certain types of bacteria which comes from farm dirt from those that come from unclean vessels.

5. The estimation of the number of bacteria in milk by microscopic study has the following advantages and disadvantages:

(*a*) It is of no value when the number of bacteria in the milk is low.

(*b*) The microscopic examination gives numbers of bacteria vastly higher than those given by the plate method. (In a series of 20 comparative tests by one member of the committee there was found an average of 5,000 bacteria by the plate method, 700,000 bacteria by the Stewart-Slack method, and 5,000,000 bacteria by the Prescott-Breed method of microscopic examination.)

(*c*) In determining the total number of bacteria in milk the microscopic examination is far more accurate than the plate method, since it gives practically all of the bacteria present, while the plate method gives only those that grow in special media under special conditions. The microscope, however, fails to distinguish between living and dead bacteria.

(*d*) The Stewart-Slack method of examining milk is of great practical use in those cities which have a bacterial standard of 500,000, since it quickly detects milk which contains bacteria more than this limit without the necessity of making plate count. For samples that contain about 500,000 or less it is necessary to make a plate count in order that the result may be reliable.

(*e*) The data at hand are as yet insufficient to determine the factor by which the milk could be condemned by the Prescott-Breed method. Data at present at hand would seem to indicate that nearly all samples of milk would approach or surpass this limit of 500,000 when the bacteria are determined by the direct method of examination of Prescott-Breed.

(*f*) No constant ratio can be found between the number of bacteria disclosed by the miscroscope and the number found by the plate count. There is a general parallel but with many irregularities.

6. No method has yet been accepted for accurately distinguishing between the pus cells and other cells that may be in the milk that do not have an origin in inflammatory conditions. Some regard all noticeably clumped cells as indicating pus, stating that upon proper incubation, all such clumpings may be found to be accompanied by chain-forming streptococci. Others regard all polymorpho-nuclear neutrophilic cells as pus. Most, however, at the present time fail to recognize any method of clearly distinguishing pus from tissue cells.

7. A general consensus of opinion has been reached that a high cell count should not alone condemn milk, although it is a matter for suspicion. The cell count varies with the same cow upon different days and it may be increased by simply manipulating the udders. Some believe that clumped cells always indicate an inflammatory condition.

8. A high cell count accompanied by streptococci apparently always indicates udder troubles. In many cases these have been followed up to the dairy, and where this has been done it is almost always possible to find the source in some cow suffering from some trouble in its udders.

9. More data is needed before it can be definitely stated whether ill health in children can be traced to milk that would be condemned by the microscope, although this has apparently been done in some cases.

10. At the present time, it is impossible to agree upon any standard for condemning milk by cell count beyond the general rule that a high cell count accompanied by streptococci indicates an inflammatory condition or otherwise diseased udders.

11. Where the source of the milk is known, microscopic method of study is of great value in picking out animals with diseased udders. It is of a special help in directing attention to a herd that needs inspection, and has been extensively and satisfactorily used in this way. In market milk, it is of great value where the source of the milk is known and can be reached, and its chief value is in finding the location of troubles rather than in condemning milk.

12. Concerning the value of the microscopic examination of milk, there are wide differences of opinion among those who have been using it. A few regard it as of little value and have discarded it entirely. Some have thought it of some value, but much less than

the bacteriological plate count. Others regard it of more value than the plate count; and some have looked upon it as of so much value as to lead them to substitute it for the older method of bacteriological examination by plates, this latter method of examining having been quite abandoned. The claim is made in these cases that it gives better and quicker results and has been found of practical value in controlling the milk supply by pointing out the sources of trouble. All who have used this method recognize that it gives valuable data.

13. Concerning the dirt test, the committee would make the following statement: Of the several methods of determining the presence of dirt in milk the committee believe that the most valuable is that of filtering it through a cotton disk. This committee would suggest that a standard disk of an inch in diameter be selected for the filtering of a quart of milk, and proportionate-sized disk for smaller amounts of milk. The Lorenze apparatus is a convenient filter for filtering milk through a cotton disk; but various other types than that distinctly known by this name are equally satisfactory. A Gooch crucible may be used conveniently or any other device in which the cotton disk is supported upon a gauze and in such position that milk can be readily filtered through it. To be most efficient, the cotton disk should be subsequently dried and sent to the individual dairyman.

In order to have the best results, the most desirable plan is to do the filtering in the dairy immediately after milking. For this purpose batteries of filters are needed, and these must be warmed in cold weather in order that milk should pass through them readily. If these are used in the dairy, the results thus demonstrated to the dairyman are very convincing. The test is quick and simple and is proving very useful in locating unclean methods. It is much less cumbersome than the somewhat more expensive method of measuring the amount of dirt, and although it does not give a quantitative, but only comparative result, it is as useful for the purpose of detecting and remedying unclean conditions as the more slow and more expensive quantitative methods.

From these data the committee would present the following recommendations:

RECOMMENDATIONS.

1. The direct microscopical examination of raw milk gives very valuable information, since it presents in a few moments a graphic picture of the bacterial content as well as the number of cells and offers a prompt method of excluding some samples of milk which are manifestly unfit for use, doing this promptly. To give the most valuable results, the committee would recommend the use of some good blood stain like the Jenner or the Wright stain.

2. Because of the irregularities in methods and results, no standard can yet be given for grading milk by the microscopic examination. Special attention is recommended to the presence of polymorphonuclear neutrophilic cells. A high cell count alone is not sufficient to condemn milk, but if accompanied by chain-forming streptococci it is an indication of udder troubles. The presence of streptococci alone is also sufficient to suggest the same conclusion. The microscopic examination is therefore of great use in picking out animals with diseased udders for the purpose of removing them from the dairy herd after a proper examination of individual cows.

3. The data as yet accumulated are insufficient to determine whether the examination of milk by the centrifugal method of the Stewart-Slack type or the direct examination by the Prescott-Breed method gives the most reliable results.

4. The total numbers of bacteria found by the microscopic examination are so out of proportion to those given by those of the plate method that no ratio can be at present drawn between them.

5. The data which have as yet been collected are insufficient to determine whether the microscopic examination of pasteurized milk is of any value.

6. The determination of dirt by filtering a quart of milk through a cotton disk of an inch in diameter is advised as of the greatest value in detecting uncleanly conditions and in conveying a most graphic lesson of the need of cleanliness to the dairyman. Preferably this should be done in the dairy where feasible.

METHODS OF REPORTING BACTERIAL COUNTS.

CLASSIFICATION OF DEALERS' MILKS.

The commission recommends the use of North's modification of Levy's method of giving each bacterial count a rating value. This modification consists in the use of such values as can be obtained from a parabolic curve having as ordinates the ratings and as abscissas the bacteria counts. The final statement of a series of bacterial counts is given as a single figure which expresses the sanitary character of the milk in terms of bacteria per cubic centimeter. This figure, it is recommended, shall be known as the "bacterial content."

To warrant a statement of the class or grade in which a given milk belongs, at least four consecutive counts should be made of separate samples of milk taken within a period of not more than four weeks.

All laboratory workers are familiar with the fact that the differences in sanitary importance of high and low bacterial counts are not proportional to the numerical differences. It is recognized that bacteria multiply in geometric progression. A single germ may divide, under favorable conditions, about once every half hour, so that from 1 it will have increased to 281,474,976,710,656 within 24 hours. This means that under favorable conditions, if there were no interruptions and no deaths, 1 germ in a 40-quart can of milk might multiply in 24 hours, so that 1 cubic centimeter of milk would contain over 7,438,000,000. The ability of some bacteria to multiply with extreme rapidity is the reason why high counts should not be given the same value which is given to low counts.

The method proposed for stating the results of bacterial counts aims to recognize all high counts but at the same time to prevent them from misrepresenting the real character of the milk. The method may at first seem complicated because of its use of higher mathematics, but as a matter of fact is extremely simple.

THE PARABOLIC CURVE.

Without going into a discussion of the properties of the different mathematical curves, it can be stated that a parabola is a regular curve, which increases its distance far more rapidly in a horizontal direction than in a vertical direction, or vice versa, and, consequently, lends itself to the conditions of the problem which faces the bacteriologist who has, on the one hand, bacteria counts which increase enormously in the higher figures, while on the other he has values which he desires to attach to the same, which do not differ so enormously. The values for bacteria counts obtained from the parabola are as follows:

Where

$y^2 = 1/100.$
x = bacteria count.
y = rating corresponding.

Bacteria counts.	Normal rating.	Bacteria counts.	Normal rating.	Bacteria counts.	Normal rating.
100	1.00	9,000	9.5	300,000	54.8
200	1.41	10,000	10.0	400,000	63.2
300	1.73	15,000	12.3	500,000	70.8
400	2.00	20,000	14.1	600,000	77.5
500	2.24	25,000	15.8	700,000	83.7
600	2.45	30,000	17.3	800,000	89.5
700	2.65	35,000	18.7	900,000	95.0
800	2.83	40,000	20.0	1,000,000	100.0
900	3.00	45,000	21.2	2,000,000	141.0
1,000	3.16	50,000	22.4	3,000,000	173.0
2,000	4.47	60,000	24.5	4,000,000	200.0
3,000	5.48	70,000	26.4	5,000,000	224.0
4,000	6.32	80,000	28.3	6,000,000	245.0
5,000	7.08	90,000	30.0	7,000,000	265.0
6,000	7.75	100,000	31.6	8,000,000	283.0
7,000	8.37	200,000	44.7	9,000,000	300.0
8,000	8.95	250,000	50.0	10,000,000	316.0

From the diagram of the parabolic curve shown on page 699 the values in the table given were taken. For any bacterial count a corresponding value can be found by observing the point on the curve intersected by the line leading upward from the bacterial count and following the line of rating value which leads to the right or left at this point. Thus the line leading upward from 10,000 bacteria strikes the curve at a point through which passes the line leading to the left having rating value 10, and bacterial line 40,000 meets curve at point intersected by line of rating value 20; bacterial line 1,000,000 meets rating line 100.

In the figure the curve from 40,000 to 100,000 bacteria is much condensed to save space, and from 100,000 to 1,000,000, and again to 4,000,000, is still further condensed; these shortenings account for disjointed appearance.

This table is used as follows: Assume that a health board laboratory makes four consecutive examinations of the milk of a single dealer, and that these are as follows: 25,000, 70,000, 250,000, and 5,000,000. It desires to determine in what class this milk belongs. To express the character of the milk in a single figure set opposite each bacteria count the normal rating value found in the above table. This would be as follows:

Bacteria count.	Normal ratings.
25,000	15.8
70,000	26.4
250,000	50.0
5,000,000	224.0
	4) 316.2
	79.0—600,000+

After the normal ratings are obtained for each figure, they are added together and averaged, as shown above, giving the average rating 79. Again referring to the table it will be observed that the nearest figure in the normal rating column is 77.5, opposite which is the bacteria count of 600,000. Consequently, the final character of the milk will be expressed by the figure 600,000 bacteria per cubic centimeter. Pursuing this system with all milks makes it possible to express their character in a single figure in terms of bacteria, which it is suggested should be called "the bacterial content."

THE RATING OF A CITY'S ENTIRE MILK SUPPLY.

In the annual report of a city's department of health it is often desirable to compare the results of one year's work with another, or to compare one city's standing with that of another. For these purposes the commission recommends the use of the Levy method of stating the results of bacterial counts. In this method the bacterial counts are first divided into groups, as recommended by the American Public Health Association. To each of these groups certain percentage values are given. The final expression is made as a single figure in terms of percentage.

The groups and the percentage values recommended for each are as follows:

Bacteria.	Rating figure.	Bacteria.	Rating figure.
	Per cent.		*Per cent.*
Under 10,000	100	250,001 to 500,000	20
10,001 to 50,000	90	500,001 to 1,000,000	10
50,001 to 150,000	75	Over 1,000,000	0
100,001 to 250,000	50		

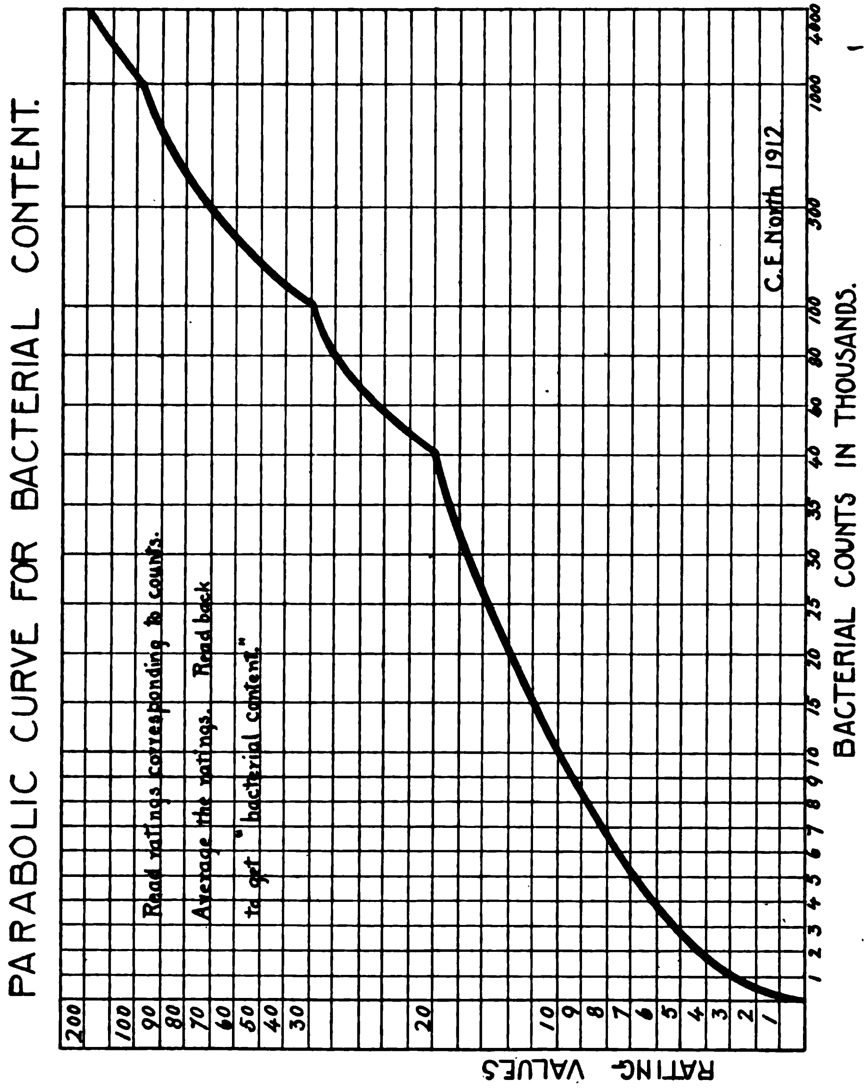
In using the above table all of the bacterial counts are first divided into groups, stating the number in each group. Each number is then mutiplied by the percentage value of its group, as illustrated in the following table:

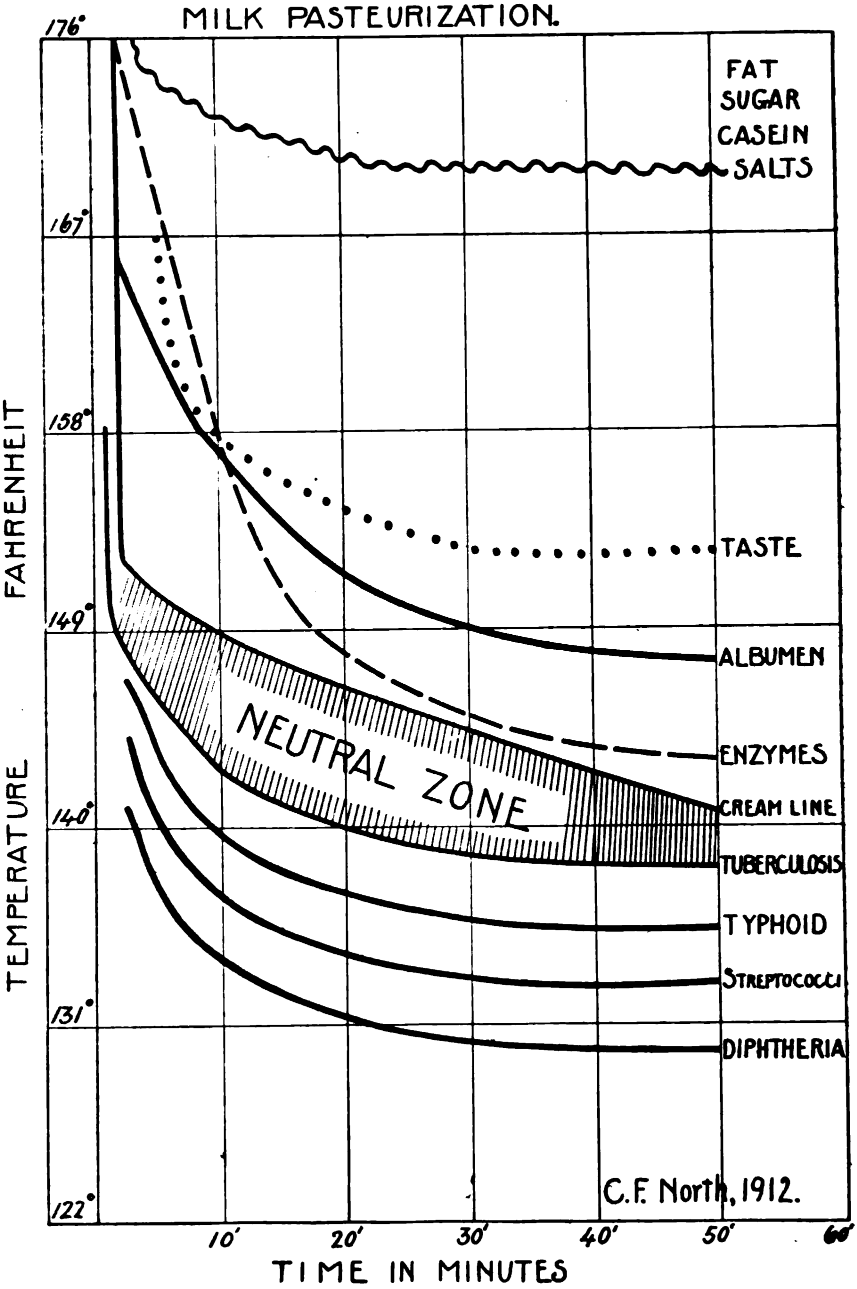
Bacteria.	Number of samples.	Rating figure.	Product.
		Per cent.	
Under 10,000	25	100	2,500
10,001 to 50,000	73	90	6,570
50,001 to 100,000	37	75	2,775
100,001 to 250,000	42	50	2,100
250,001 to 500,000	53	20	1,060
500,001 to 1,000,000	23	10	230
Over 1,000,000	12	0	0
Total	265	....	15,235

$$\frac{15,235}{265} = \text{Average} = 57 \text{ per cent.}$$

The final statement, which is the average of all percentages, is called by Levy the "bacterial index."

In reporting results of laboratory work under city conditions it is desirable that a more detailed statement be given than the single figures of "bacterial content" and "bacterial index," and it is therefore recommended that all tests made or at least all in each group be reported when possible as approved by the laboratory section of the American Public Health Association.




TIME AND TEMPERATURE FOR MILK PASTEURIZATION.

NATIONAL QUARANTINE AT PROVIDENCE, R. I.

The city of Providence, R. I., has requested the Secretary of the Treasury to establish a national quarantine station at the port of Providence, R. I.

Copies of the joint resolution of the city council and of an act of the Rhode Island General Assembly, together with the letter of transmittal, follow:

City of Providence,
Executive Department,
City Hall, April 30, 1912.

Hon. Franklin MacVeagh,
Secretary of the Treasury, Washington, D. C.

Sir: By virtue of authority in me vested, I have the honor to transmit to you, herewith, a copy of a resolution adopted by the city council of Providence, R. I. (together with a copy of a permissive act passed by the Rhode Island General Assembly and approved by his excellency the governor on April 18, 1912), requesting the Secretary of the Treasury of the United States to establish a complete system of national quarantine for the port of Providence, and providing, in the event of such establishment, for a suspension of the duties of the quarantine health officer and sentinel of this port for so long a period as such Federal quarantine inspection shall be maintained.

Most respectfully, yours,
Henry Fletcher, *Mayor.*

THE CITY OF PROVIDENCE.

Joint resolution of the city council No. 97, approved March 5, 1912.

Resolved, That the city solicitor is hereby directed to apply to the general assembly for such legislation as will provide that, upon the establishment by the United States of a system of quarantine inspection for the port of Providence, the duties of the quarantine health officer and sentinel thereof shall be suspended for so long a period as such quarantine inspection shall be maintained, and that, upon the establishment of a complete system of national quarantine for said port, the city of Providence shall be relieved of further maintaining its system of quarantine for said port. substantially in conformity with the accompanying draft act; and that upon the passage of such legislation the city of Providence hereby requests the Secretary of the Treasury of the United States to establish a complete system of national quarantine for the port of Providence, and authorizes the mayor to transmit to said Secretary a copy of this resolution, certified by the city clerk.

STATE OF RHODE ISLAND.

In General Assembly, January Session, A. D. 1912.

AN ACT In amendment of and in addition to chapter 114 of the general laws, entitled "Of quarantine."

It is enacted by the general assembly as follows:

Section 1. Chapter 114 of the general laws, entitled "Of quarantine," is hereby amended by adding thereto the following section:

"Sec. 17. Whenever the United States of America shall put in force a system of national quarantine inspection for the port of Providence the duties of the quarantine health officer and sentinel of said city shall be suspended for so long a period as such quarantine inspection shall be maintained, and whenever said United States shall establish a quarantine station, ground, or anchorage on or in the Providence River or Narragansett Bay north of Conimicut Point, and put in force a complete system of national quarantine for the port of Providence, the provisions of sections 1 to 12, both inclusive, of this chapter shall not apply to the city of Providence or the port thereof."

Sec. 2. This act shall take effect upon its passage.

STATE OF RHODE ISLAND,
OFFICE OF THE SECRETARY OF STATE,
Providence, April 26, 1912.

I hereby certify the foregoing to be a true copy of the original act approved by his excellency the governor on the 18th day of April, A. D. 1912.

In testimony whereof, I have hereunto set my hand and affixed the seal of the State aforesaid the date first above written.

[SEAL.]

J. FRED PARKER,
Secretary of State.

In compliance with the above request, and under the authority of section 8 of an act entitled "An act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service," approved February 15, 1893, the Secretary of the Treasury will detail an officer of the Public Health and Marine-Hospital Service to assume charge of the quarantine.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

BEAUMONT, TEX.

MILK—PRODUCTION, CARE, AND SALE.

SECTION 1. That from and after this ordinance becomes operative, it shall be unlawful for any person, firm, or corporation, either as principal or through agents, servants, or employees, to maintain or operate a dairy or dairy farm, or to give, sell, exchange, barter, or have in his possession for gift, sale, exchange, delivery, use, or consumption as food for human beings in the city of Beaumont any milk or cream without having first obtained from the health department of the city of Beaumont a permit so to do as hereinafter provided.

SEC. 2. To obtain such permit the applicant shall present to the said health department a written application, upon a form to be prescribed by the said health department, and shall state therein the name, business, and resident address of said applicant, the dairy or dairy farm where he produces or from which he procures supplies of milk and cream, the number of cows, if any, in the possession of such applicant, the daily average quantity of milk produced or procured, and the average quantity of milk disposed of by said applicant, and the manner and character of such disposition, and, if an itinerant distributor, the usual route pursued in such disposition, or if located at a stand or in any place or store, the usual hours when milk or other dairy products are received, and, in general, the manner in which said applicant complies with the regulations adopted in this ordinance governing dairies, dairy farms, and the traffic and the distribution of milk and cream. Said applicant shall further state the specific brand or business name, if any, under which said milk or cream is to be sold, exchanged, bartered, given, or distributed. Said written application shall be recorded in a register to be provided by the said health department and kept for that purpose.

SEC. 3. That if, upon investigation, the said health department shall conclude that the said applicant has conformed, and will conform to, and comply with, the requirements of this ordinance, it shall issue the permit herein provided, without cost to said applicant. Such permit shall be written upon a form to be prescribed by the said health department.

SEC. 4. A permit shall be required for each dairy or dairy farm, and for each place where milk or cream is sold, exchanged, bartered, given, stored, or distributed as food for human beings, either alone or together with other food or merchandise. Such permits shall be issued only in the name of the owner or distributor of such milk or other dairy product and shall be personal and nontransferable. Said permit shall be subject at all times to revocation by the said health department for cause, provided the applicant shall have five days' notice to show wherein his license should not be revoked.

SEC. 5. It shall be the duty of the person, firm, or corporation having a permit under this ordinance to exhibit the same conspicuously in the dairy or in the place where the milk or cream is kept for sale, exchange, barter, use, or distribution. All vehicles used for such sale or distribution shall display on both sides thereof either painted or metallic figures, not less than 3 inches in height, which number shall correspond with the permit number. All distributors of milk and cream on foot shall carry on their person, ready for exhibition to any sanitary officer or customer, the permit issued to him under this ordinance.

SEC. 6. Milk and cream kept for sale, use, consumption, distribution, exchange, barter, or other disposition as food for human beings, in any store, shop, restaurant, market, bakery, hotel, or other establishment shall always be kept in a covered cooler box, or refrigerator, which shall be substantially constructed, lined with metal or tiles and elevated at least 6 inches above the floor. Said cooler, box, or refrigerator shall be ventilated and properly drained.

Sec. 7. No cow shall be used in any dairy or dairy farm which is known to be suffering with splenic fever, anthrax, or any local or general disease which is liable to render the milk from said cow unwholesome, and as soon as any contagious or infectious disease is detected in any cow or cows in any dairy herd said cow or cows shall be isolated and the surface of the inclosure where said cattle are isolated shall be disinfected each day and all droppings burned. In the case of charbon or anthrax the same precaution shall be exercised as in other contagious or infectious diseases and the entire herd shall be vaccinated immediately. Where infectious or contagious disease is detected in any dairy herd no milk shall be sold from that diary for a period of 10 days after the beginning of the last case infected.

Sec. 8. It shall be unlawful for any person or firm or corporation to carry on any wagon or vehicle upon or from which milk or cream is being or is brought, carried, stored, deposited, sold, exchanged, delivered, or distributed, or offered for sale or exposed for sale or distribution as food for any human being, any swill, garbage, refuse, or any decaying or fermenting, putrefying, foul, unwholesome, noxious or filthy matter, or any cans or receptacles containing any material or substance with which cream or milk might be diluted, adulterated, or rendered impure, unwholesome, or unhealthy.

Sec. 9. No person, firm, or corporation shall within the city of Beaumont manufacture for sale, have in his possession with intent to sell, offer, or expose for sale, or sell or exchange any milk or cream which is adulterated within the meaning of this act.

Sec. 10. It shall be unlawful for any person, either by himself or agent, to sell or expose for sale or exchange any unwholesome, watered, adulterated, or impure milk, or swill milk or colostrum, or milk from cows kept upon garbage, swill, or any other substances in the state of putrefaction or other deleterious substance, or from cows kept in connection with any family in which there are infectious diseases, or from sick or diseased cows; provided, "skim milk" may be sold if on the can or package from which such milk is sold, the words "skim milk" are distinctly printed in letters not less than 1 inch in length.

Sec. 11. That for the purpose of this act milk or cream shall be deemed to be adulterated:

(1) If any substance has mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

(2) If any substance has been substituted wholly or in part.

(3) If any valuable constituent has been wholly or in part abstracted, or if the product be below that standard of quality, quantity, strength, or purity represented to the purchaser or consumer.

(4) If it be mixed, colored, or stained in any manner whereby damage or inferiority is concealed.

(5) If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health.

(6) If it contain any filthy, decomposed, or putrid animal or vegetable substance. For the purpose of this act the term "filthy" shall be deemed to apply to milk and cream not securely protected against flies, dust, dirt, and, as far as may be necessary by all reasonable means, from all foreign or injurous contaminations.

Sec. 12. The standard for whole milk sold or exposed for sale or exchange and intended for use and human consumption in the city of Beaumont shall be that adopted by the United States Department of Agriculture and the dairy, food, and drug department of the State of Texas; it shall be whole milk, neither watered nor skimmed in any degree, and must contain of fat not less than 3.25 per cent, of nonfatty solids not less than 8.5 per cent, and of total solids not less than 11.75 per cent.

Sec. 13. The standard for cream shall be the fat contained in 4 gallons of standard whole milk, and standard cream shall contain of fat not less than 13 per cent.

Sec. 14. It shall be the duty of the health officer to cause all dairies, dairy farms, and other establishments from which milk or cream is sold, offered for sale, exchange, or distribution for human consumption in the city of Beaumont, to be inspected from time to time to satisfy such health officer that the provisions and requirements of this ordinance are constantly complied with.

Sec. 15. The said health officer, his officers, agents, and employees shall have the right and it shall be his duty to enter and have full access, egress, and ingress to all places where milk or cream is stored, sold, or kept for sale, and to all wagons, carriages, or other vehicles, railroad cars, steamboats, or other conveyances of every kind used for the conveyance or delivery or distribution of milk or cream for the purpose of human consumption in the city of Beaumont.

SEC. 16. The health officer and his agents and employees shall have the right any time and it shall be his duty to take a sample of milk or cream from any person, persons, or concern selling or exposing for sale, or exchange, or delivering or distributing milk or cream in the city of Beaumont; not exceeding, however, 1 pint thereof, such samples to be taken and sealed in full view and in the presence of the person from whom said sample is taken, and shall then and there furnish to the person from whom such milk or cream is taken one-half of such sample, hermetically sealed, and shall retain the sample so taken hermetically sealed; such sample shall have written thereon the number of the dealer's permit, the date on which the sample was obtained, the name of the person by whom it was taken, and a memorandum thereof shall be made by the person obtaining such sample in a book kept for that purpose in the office of the health department, showing the name of the owner or driver from whom the sample was taken, the date the same was taken, and the number of the dealer's permit.

SEC. 17. Any person who shall violate any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine of not less than $25 and not more than $200.

[Ordinance adopted Oct. 3, 1911.]

GRAND RAPIDS, MICH.

MILK—PRODUCTION, CARE, AND SALE.

SECTION 1. No person, persons, firm, or corporation shall bring to the city of Grand Rapids, keep for sale, sell, barter, handle, or traffic in milk, cream, or buttermilk within the city of Grand Rapids without first having been duly licensed so to do.

SEC. 2. Any person, persons, firm, or corporation, except common carriers, desiring to transport, keep for sale, sell, handle, barter, or traffic in milk, cream, or buttermilk within the city of Grand Rapids shall make application in writing for permission therefor to the board of health of said city of Grand Rapids upon blanks to be provided by said board. Said board shall require any such applicant to state in writing upon said blanks:

First. The applicant's full name, residence, and post-office address, and whether such applicant is an individual, firm, or corporation.

Second. The location of applicant's place or places of business, together with the place or places where any milk or cream is kept, handled or sold by said applicant, together with the location of the dairy farms from which the milk so handled or to be handled is obtained or produced.

Third. The names and addresses of all intermediate agencies or persons who handle the milk or cream between the place or places where the milk or cream is produced and the place or places where such milk or cream is received by the applicant, together with a statement of the method of transporting such milk or cream.

Fourth. The manner in which said applicant intends to dispose of milk or cream after receiving a license therefor as herein provided.

Fifth. An agreement that said applicant will notify the board of health of any intended change of supply, as required in paragraph No. 2, before making such change.

SEC. 3. Upon the signing of such application by the applicant, or some one duly authorized by him in writing, said board of health shall make or cause to be made an investigation to ascertain whether such applicant and those who furnish milk and cream for such applicant are in a postition to observe, and are willing to observe, the terms and conditions of this ordinance, and said applicant shall agree to permit any duly authorized officer, inspector, or agent of said board of health to go upon the premises of any person, persons, firm, or corporation from which such applicant may receive milk or cream, or may intend to receive milk or cream for consumption in said city of Grand Rapids, and permit said representatives of said board of health to inspect the methods employed by said applicant for handling milk and cream and caring for the same when received, and shall permit the officers of said board or its agents or inspector to examine the utensils used in handling said milk and cream, and give full and complete inspection thereof from the time the same comes into the control of the applicant until the same is sold and delivered by him. And if it shall appear to the board after such investigation that said applicant is in a position to furnish clean, pure, wholesome, healthy, and unadulterated milk, cream, and buttermilk to his customers, if he is licensed so to do by the said board, then the board of health shall indorse upon the application a favorable report and transmit the application to the city clerk of the city of Grand Rapids, and no such application shall be sent to the city clerk unless the same shall be favorably indorsed by the board of health.

the terms of this ordinance, said board is hereby authorized and it is made its duty to seize said milk or cream and destroy the same, after having given such notice to the owner or person having charge thereof as to the said board seems reasonable, and given such person a hearing thereon, or to make disposition of the same in such a manner as will not be a menace to the health of the residents of the said city. It shall be the duty of the board of health to publish monthly the names, score, condition of equipment, methods, sanitary conditions, or such other data it may think proper to inform the consuming public of the standing and efficiency of every dealer in milk in the city of Grand Rapids.

Sec. 15. Said board of health is hereby empowered in its discretion to revoke the license or permit of any person, persons, firm or corporation who by himself, themselves, or itself, or their servants, agents, or employees ignore and violate the terms and requirements of this ordinance, on conviction thereof, in addition to the other penalties provided in this ordinance, shall be liable to a fine of not less than $2 nor more than $100, and the costs of prosecution, and be liable to imprisonment in the county jail of the county of Kent, in the discretion of the court or magistrate before whom the conviction may be had, for a period of not less than 5 days nor more than 90 days, and in case such court or magistrate shall only impose a fine and costs, the offender may be sentenced to any jail of the county of Kent until the payment of such fine and costs for a period of not more than 90 days, and such punishment shall apply to each succeeding day of continuous offense.

[Ordinance adopted Jan. 29, 1912.]

REPORTS TO THE SURGEON GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 20, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	2	1	Newark, N. J	1	1
Chattanooga, Tenn	2	2	New Orleans, La	....	1
Chicago, Ill	2	1	New York, N. Y	10	11
Cincinnati, Ohio	5	....	Oklahoma City, Okla	1	1
Cleveland, Ohio	1	1	Philadelphia, Pa	1	....
Dayton, Ohio	....	1	Rockford, Ill	....	1
East St. Louis, Ill	1	....	Saginaw, Mich	12	....
El Paso, Tex	4	3	St. Louis, Mo	5	5
Fort Wayne, Ind	1	....	San Antonio, Tex	6	4
Galveston, Tex	1	1	San Francisco, Cal	....	1
Haverhill, Mass	3	4	Saratoga Springs, N. Y	1	....
Kansas City, Kans	10	....	Spokane, Wash	....	3
Kansas City, Mo	20	20	Springfield, Ill	....	1
Los Angeles, Cal	1	1	Springfield, Mass	1	1
Nashville, Tenn	12	5	Wilmington, Del	....	1

Chicago, Ill.

The commissioner of health reports May 1 the occurrence of three cases of cerebrospinal meningitis at Chicago, Ill., in young Greek adults who arrived at New York, N. Y., April 19, on the steamship *Macedonia.*

Gary, Ind.

Two cases of cerebrospinal meningitis in persons from the steamship *Macedonia* were reported at Gary, Ind., May 2.

The *Macedonia* left Piraeus, the port of Athens, Greece, April 2, for New York via Greek ports and St. Michaels. Cerebrospinal meningitis has been reported prevalent in many parts of Greece since December 1, 1911.

New York, N. Y.

Surg. Stoner reports May 6: Two cases of cerebrospinal meningitis in Greeks arriving April 19 on the steamship *Macedonia* were removed at quarantine. One of these cases ended fatally April 22. In addition to these, during the month of April, five aliens suffering from cerebrospinal meningitis were admitted to the immigration contagious-disease hospital. One case ended fatally. These cases arrived as follows: Three on steamship *Athani,* 1 on steamship *Verdi,* and 1 on steamship *Kaiserin Auguste Victoria.*

During the month of March, 1912, 11 aliens suffering from cerebrospinal meningitis were admitted to the immigration contagious-disease hospital. Of these 4 died. The cases were removed from several different vessels.

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 20, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Binghampton, N. Y	1		Milwaukee, Wis	8	1
Boston, Mass		1	Montclair, N. J	1	
Cincinnati, Ohio	4		Newark, N. J		1
Cleveland, Ohio	6	1	New York, N. Y	44	12
Duluth, Minn	3		Passaic, N. J	1	
Harrisburg, Pa	2		Philadelphia, Pa	3	2
Hartford, Pa	1		Pittsburgh, Pa	3	
Jersey City, N. J		3	St. Louis, Mo	14	
Kalamazoo, Mich	1		San Francisco, Cal	3	1
Kansas City, Mo	1		Taunton, Mass		1
Los Angeles, Cal	4	1	Wilkes-Barre, Pa	1	
Lowell, Mass		1	Williamsport, Pa	1	
Lynn, Mass		1	York, Pa	1	

PELLAGRA.

During the week ended April 20, 1912, pellagra was reported by city health authorities as follows: Baltimore, Md., 1 death; Columbus, Ga., 1 death; Lexington, Ky., 1 death.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 20, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Alameda, Cal	2	2	Nashville, Tenn		4
Altoona, Pa		4	Newark, N. J		11
Auburn, N. Y	2	2	New Bedford, Mass		6
Aurora, Ill		3	Newburyport, Mass		1
Baltimore, Md		21	New Castle, Pa	2	
Binghamton, N. Y	6	5	New Orleans, La		10
Boston, Mass		38	Newton, Mass		2
Bridgeport, Conn		4	New York, N. Y		141
Brockton, Mass		2	Niagara Falls, N. Y		4
Brookline, Mass		1	Oklahoma, Okla		4
Cambridge, Mass		6	Omaha, Nebr		3
Camden, N. J	19		Passaic, N. J		5
Chicago, Ill	32	110	Pawtucket, R. I		8
Chelsea, Mass		2	Philadelphia, Pa	18	44
Chicopee, Mass		5	Pittsburgh, Pa	35	31
Cincinnati, Ohio		10	Pittsfield, Mass		1
Cleveland, Ohio	22	15	Plainfield, N. J		1
Cumberland, Md		1	Providence, R. I		6
Danville, Ill		1	Racine, Wis		2
Dayton, Ohio		5	Reading, Pa	3	2
Denver, Colo		4	Richmond, Va		3
Duluth, Minn		1	Roanoke, Va		1
Dunkirk, N. Y	2		Rutland, Vt	2	
East Orange, N. J		2	Saginaw, Mich		5
Elmira, N. Y		1	Salem, Mass		1
El Paso, Tex		2	San Diego, Cal	1	1
Evansville, Ind		2	San Francisco, Cal	8	
Fall River, Mass		1	Schenectady, N. Y	8	4
Fort Wayne, Ind	1		Saratoga Springs, N. Y	3	1
Galesburg, Ill	2	2	Seattle, Wash		1
Grand Rapids, Mich	2	2	South Bend, Ind		2
Harrisburg, Pa		7	South Bethlehem, Pa	1	
Hartford, Conn		2	South Omaha, Nebr	7	7
Kalamazoo, Mich	4	1	Spokane, Wash		2
Kansas City, Mo	10	7	Springfield, Ill		1
Knoxville, Tenn		1	Springfield, Mass		2
Lawrence, Mass		3	Superior, Wis		1
Lexington, Ky		2	Taunton, Mass		1
Los Angeles, Cal	1	9	Toledo, Ohio		4
Lowell, Mass		1	Waltham, Mass		1
Lynchburg, Va		1	Washington, D. C		17
Lynn, Mass		1	Wilkes-Barre, Pa		3
Malden, Mass		1	Wilkinsburg, Pa	1	
Marinette, Wis		1	Williamsport, Pa	1	1
Medford, Mass		1	Wilmington, Del		9
Montclair, N. J	1		Zanesville, Ohio		3

POLIOMYELITIS.

During the week ended April 20, 1912, poliomyelitis was reported by city health authorities as follows: Boston, Mass, 1 death; Newark, N. J., 1 case; New York, N. Y., 4 cases; Philadelphia, Pa., 1 case.

RABIES.

During the week ended April 20, 1912, 6 deaths from rabies were reported by the city health authorities of Kearny, N. J., and 13 cases were reported at San Francisco, Cal.

During the period from April 15 to 22, 1912, 4 cases were reported at Jacksonville, Fla.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED MAY 10, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Florida:				
Counties—				
Duval	Apr. 16-22	7	1	
Escambia	do	6		
Hillsboro	do	1		
Leon	do	3		
Putnam	do	17		
Total for State		34	1	
*Louisiana:				
New Orleans	Apr. 21-27	13		
*Missouri:				
St. Louis	do	4		
*Nebraska:				
Omaha	do	1		
New Jersey:				
Counties—				
Essex	Mar. 1-31	1		
New York:				
Counties—				
Cattaragus	Mar. 1-31	5		
Cayuga	do	8		
Cortland	do	9		
Dutchess	do	2		
Erie	do	1		
Franklin	do	2		
Genesee	do	1		
Jefferson	do	1		
Monroe	do	8		
New York	do	1		
Ontario	do	1		
Schuyler	do	1		
Steuben	do	4		
Tompkins	do	1		
Wayne	do	4		
Wyoming	do	5		
Total for State		54		
Oregon	Oct. 1-31	5		Not included in previous reports.
Do	Nov. 1-30	6		
Do	Dec. 1-31	13	1	
Total for State		24	1	

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended May 10, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Pennsylvania	Feb. 1-29	35	1	
Do	Mar. 1-31	22		
Total for State		57	1	
*Tennessee:				
Chattanooga	Apr. 21-27	1		
Knoxville	do	5		
Nashville	do	1		
Total for State		7		
Texas	Dec. 1-31	1	10	Omitted from report, p. 170.
Counties—				
Brazoria	Mar. 1-31	1	1	
Brown	do	1		
Coleman	do	3	1	
Goliad	Jan. 1-Mar. 31	32	1	
Johnson	Mar. 1-31	1		
Jones	do	1		
Lamar	do	9		
Marion	do	1		
McCulloch	do	10	4	
McLennan	do	1		
San Patricio	do	5		
Tarrant	do	126	34	
Travis	do	2		
Upshur	do	15		
Total for State		208	41	
Washington:				
Counties—				
Asotin	Feb. 1-29	17		
Chelan	do	13		
Clark	do	1		
King	do	5		
Klickitat	do	11		
Lincoln	do	4		
Pacific	do	4		
Pend Oreille	do	1		
Pierce	do	16		
Skagit	do	6		
Spokane	do	68		
Stevens	do	2		
Walla Walla	do	10		
Whitman	do	1		
Yakima	do	2		
Total		161		
Chelan	Mar. 1-31	2		
Clark	do	3		
Columbia	do	1		
Garfield	do	2		
Grant	do	51		
King	do	7		
Klickitat	do	5		
Pacific	do	1		
Pierce	do	47		
Skagit	do	1		
Spokane	do	68		
Whatcomb	do	1		
Yakima	do	3		
Total for State		192		
Grand total for the United States		757	54	

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED APR. 20, 1912.

Cities.	Population, United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	175	30	1	12	....	12	....	....	....	63	30	12	....
Boston, Mass	670,585	259	21	....	165	4	23	1	....	....	70	26	4	....
Chicago, Ill	2,185,283	666	126	15	189	3	251	16	2	....	150	76	9	2
Cleveland, Ohio	560,663	172	26	5	53	....	30	3	....	....	42	15	2	1
New York, N. Y	4,766,883	1,562	271	38	1,704	24	483	28	1	....	[1] 451	192	25	2
Philadelphia, Pa	1,549,008	483	93	11	23	....	101	3	....	....	103	52	9	4
Pittsburgh, Pa	533,905	165	11	1	72	2	27	....	....	....	42	17	4	2
St. Louis, Mo	687,029	245	22	3	40	....	19	....	3	....	42	26	6	1
Cities having from 300,000 to 500,000 inhabitants.														
Cincinnati, Ohio	364,463	132	8	....	25	....	19	1	1	....	35	20	2	2
Detroit, Mich	465,766	170	14	2	....	....	34	1	1	....	....	....	....	....
Los Angeles, Cal	319,198	126	4	....	8	....	15	....	1	....	6	23	3	2
Milwaukee, Wis	373,857	118	8	....	105	....	20	4	....	....	16	8	2	1
Newark, N. J	347,469	97	12	....	130	1	15	....	....	....	35	13	1	....
New Orleans, La	339,075	140	3	....	6	....	11	1	10	....	27	22	6	2
San Francisco, Cal	416,912	122	3	....	40	4	7	....	3	....	23	20	2	....
Washington, D. C	331,069	122	4	....	63	....	5	....	....	....	29	14	6	....
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	47	3	....	2	....	6	....	1	....	....	11	1	....
Jersey City, N. J	267,779	71	....	1	....	1	....	....	....	....	....	12	....	....
Kansas City, Mo	248,381	41	3	....	5	1	4	....	....	....	5	13	1	....
Providence, R. I	224,326	....	8	2	26	7	16	....	....	....	....	7	2	....
Seattle, Wash	237,194	47	1	....	23	....	5	....	4	....	9	4	....	1
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	28	1	....	2	....	3	....	....	....	9	3	....	....
Cambridge, Mass	104,839	28	5	....	91	1	2	....	....	....	6	3	2	....
Columbus, Ohio	181,548	61	4	....	20	....	7	....	....	....	20	9	3	....
Dayton, Ohio	116,577	40	....	....	46	....	....	....	9	....	1	7	1	....
Fall River, Mass	119,295	37	2	....	1	....	1	....	....	....	7	4	3	....
Grand Rapids, Mich	112,571	32	....	....	2	....	8	....	....	....	5	1	1	....
Lowell, Mass	106,294	40	....	....	8	....	4	....	....	....	5	2	1	....
Nashville, Tenn	110,364	44	1	....	....	....	5	....	....	....	6	2	2	....
Omaha, Nebr	124,096	29	1	1	1	....	1	....	....	....	....	1	1	....
Richmond, Va	127,628	54	2	....	77	....	2	....	1	....	5	8	....	....
Spokane, Wash	104,402	....	....	....	33	....	....	....	9	....	....	1	1	1
Toledo, Ohio	168,497	51	4	1	67	1	....	....	....	....	....	9	2	....
Worcester, Mass	145,986	42	5	1	10	....	5	1	....	....	7	1	....	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	13	2	....	....	....	1	....	....	....	1	2	....	....
Bayonne, N. J	55,545	13	....	....	....	....	....	1	....	....	....	2	....	....
Brockton, Mass	56,878	18	1	....	55	1	1	....	....	....	1	1	....	....
Camden, N. J	94,538	....	2	....	....	....	2	....	....	....	14	....	1	....
Duluth, Minn	78,466	14	1	....	1	....	11	....	....	....	1	1	....	....
Erie, Pa	66,525	20	4	....	4	....	7	....	....	....	2	3	1	....
Evansville, Ind	69,647	13	1	....	1	....	4	....	....	....	....	3	4	....
Fort Wayne, Ind	63,933	14	....	....	9	....	1	....	....	....	11	....	....	....
Harrisburg, Pa	64,186	26	4	....	207	1	....	....	1	....	6	....	1	....
Hartford, Conn	98,915	34	11	2	33	....	11	....	....	....	5	1	....	....
Hoboken, N. J	70,324	....	1	....	4	....	1	....	....	....	5	2	....	....
Johnstown, Pa	55,482	30	4	....	....	....	1	....	....	....	....	2	....	....
Kansas City, Kans	82,331	....	1	....	5	....	....	....	....	....	3	....	2	....
Lawrence, Mass	85,892	31	4	....	9	....	5	1	....	....	6	6	[illegible]	....
Lynn, Mass	89,336	22	2	....	8	....	7	1	....	....	1	1	1	....

[1] Pulmonary.

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Apr. 20, 1912—Continued.

Cities.	Population, United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Manchester, N. H	70,063	21			8		2				1	1		
New Bedford, Mass	96,652	35			5		3				8	2	1	
Oklahoma City, Okla	64,205	18										1		
Passaic, N. J	54,773	19	2	1	27						3	1		1
Pawtucket, R. I	51,622			1					1			1		
Reading, Pa	96,071	27	6	2	2		2					1		
Saginaw, Mich	50,510	19	3		1		2				1	1	1	
San Antonio, Tex	96,614	61	1		4					1		9	3	
Schnectady, N. Y	72,826	21	4		81						1	3		
South Bend, Ind	53,684											1	1	
Springfield, Ill	51,678						2					1	3	
Springfield, Mass	88,926	36	4		17		1				6	3		
Trenton, N. J	96,815	34	2				4				11	3	1	1
Wilkes-Barre, Pa	67,105	23	4		5						9			
Wilmington, Del	87,411	34										1		
Yonkers, N. Y	79,803	19	10	2	15		7				7	1		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	13	1		1		2						1	
Auburn, N. Y	34,668	14					2				1	2		
Aurora, Ill	29,807	13										1		
Berkeley, Cal	40,434	5			27						1			
Binghamton, N. Y	48,443	23	2	1	2		1				2	2	3	
Brookline, Mass	27,792	10			6		1				2			
Chattanooga, Tenn	44,604		1						1		3			
Chelsea, Mass	32,452	12	1		26		2				4			
Chicopee, Mass	25,401	10	1		5		1				2	1		
Danville, Ill	27,871	9	1		4							2		
East Orange, N. J	34,371	10	4		20		1					1		
Elmira, N. Y	37,176	10	1		7									
El Paso, Tex	39,279	31					1				1	7	1	1
Everett, Mass	33,484	7			21						5	1		
Fitchburg, Mass	37,826	14	1								1	1		
Haverhill, Mass	44,115	15	1		9		4				3	1	1	
Kalamazoo, Mich	39,437	14					4		3		1			
Knoxville, Tenn	36,346	11			9				2			2		
La Crosse, Wis	30,417	12	3	1			1		2			1		
Lexington, Ky	35,099	19			2		1				4	2		1
Lima, Ohio	30,508	10			2		1					1		
Lynchburg, Va	29,494	6			39		2				3	2		
Malden, Mass	44,404	10			8		2					3		
Newcastle, Pa	36,280		3				1						1	
Newport, Ky	30,309	12					7				1	1		
Newton, Mass	39,806	13			45						1			
Niagara Falls, N. Y	30,445	14	2				2		5			2		
Norristown, Pa	27,875	6	1		7		1					1		
Orange, N. J	29,630		2		6		6				2	1		
Pasadena, Cal	30,291	10	3	1										
Pittsfield, Mass	32,121	6	5		2		1				4			
Portsmouth, Va	33,190	11							5					
Racine, Wis	38,002	10	2									2		
Roanoke, Va	34,874	14			26		1				4	2	1	
Rockford, Ill	45,401	22	1				6					6	10	1
Salem, Mass	43,697	12							26			1		
San Diego, Cal	39,578	4			3		6		3		4	3		
South Omaha, Nebr	26,259	17	1											
Superior, Wis	40,384	8										2		
Taunton, Mass	34,259	15	2	1			1				2	1		
Waltham, Mass	27,834				43						1		2	
West Hoboken, N. J	35,403		4		2		3				2			
Williamsport, Pa	31,860	5			23						1	1		
York, Pa	44,750		2		1						4		1	
Zanesville, Ohio	28,026	12					1					1		

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Apr. 20, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	5			15								1	
Ann Arbor, Mich	14,817	16			2						4			
Beaver Falls, Pa	12,191												2	1
Bennington, Vt		4			3		1							
Braddock, Pa	19,357	4	3	1										
Cambridge, Ohio	11,327	2												
Carbondale, Pa	17,040	5			21		2							
Clinton, Mass	13,075	4												
Coffeyville, Kans	12,687												1	
Columbus, Ga	20,554	4												
Columbus, Ind		0							5					
Concord, N. H	21,497	5	1		11	1						1		
Cumberland, Md	21,839	6			48							1	1	
Dunkirk, N. Y		5									2		1	
Galesburg, Ill	20,089	6									1		1	
Gloucester, Mass	24,398	4									1			
Harrison, N. J	14,498	3												
Homestead, Pa	18,713	6			1							1	1	
Kearny, N. J	18,659	9			6		3		1			1	1	
La Fayette, Ind	20,081	5												
Logansport, Ind	19,050	9					1		1				12	2
Marinette, Wis	14,610	5												
Marlboro, Mass	14,577	3	1	1	2									
Massillon, Ohio		3												
Medford Mass	23,156	3			22		1				1			
Melrose, Mass	15,715		1		16									
Moline, Ill	24,199	10												
Montclair, N. J	21,150	4			13		3				3			
Morristown, N. J	12,507	3			4		2							
Nanticoke, Pa	18,507	4	1									1		
Newburyport, Mass	19,240	5					1					1		
North Adams, Mass	22,012	5			4						1	1		
Northampton, Mass	19,431	6			7		1					1		
Plainfield, N. J	20,550	6			36		2							
Pottstown, Pa	15,599	5												
Rutland, Vt	13,546	4			1									
Saratoga Springs, N. Y		4									1			
South Bethlehem, Pa	19,973	9			7						1	1	1	
Steelton, Pa	14,246	5			2				2					
Warren, Pa	11,080	4					1				1	2	1	
Wilkinsburg, Pa	18,924	6					1				3			
Woburn, Mass	15,308	2			13						4	1		

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

Florida.—Week ended April 22, 1912. Reports from the State board of health show diphtheria present in 3 localities with 5 cases, malaria in 3 localities with 29 cases, smallpox in 5 counties with 34 cases, tuberculosis in 9 localities with 14 cases, typhoid fever in 4 localities with 7 cases.

Iowa.—Month of February, 1912. Population, 2,224,771. Total number of deaths from all causes 1,894, including diphtheria 11, measles 1, scarlet fever 5, tuberculosis 125, typhoid fever 18.

Maryland.—Month of March, 1912. Population, 1,295,346. Total number of deaths from all causes from infectious diseases include diphtheria 15, measles 3, tuberculosis 89, typhoid fever 13. Cases reported: Diphtheria 41, measles 168, scarlet fever 59, typhoid fever 54. The typhoid fever cases were distributed as follows: Potomac River watershed 18, Patapsco River watershed 8 cases, Patuxent River watershed 3 cases, Herring Run watershed 2 cases.

NEW JERSEY.—Month ended April 10, 1912. Population, 2,537,167. Total number of deaths from all causes 3,344, including diphtheria 36, measles 37, scarlet fever 18, tuberculosis 429, typhoid fever 14.

NORTH DAKOTA.—Month of March, 1912. Population, 577,056. Total number of deaths from all causes 311, including scarlet fever 1, tuberculosis 1, typhoid fever 1. Cases reported: Diphtheria 13, measles 5, scarlet fever 25, smallpox 23, tuberculosis 9, typhoid fever 14.

PENNSYLVANIA.—Month of January, 1912. *Mortality.*—Total number of deaths, 10,345, including typhoid fever 128, scarlet fever 38, diphtheria 274, measles 73, whooping cough 63, smallpox 1, influenza 157, malaria 3, tuberculosis of the lungs 822, tuberculosis of other organs 111, cancer 452, diabetes 74, menigitis 43, acute anterior poliomyelitis 3, pneumonia 1,594, diarrhea and enteritis under 2 years 153, diarrhea and enteritis over 2 years 62, Bright's disease 654, early infancy 587, suicide 70, accidents in mines 106, railway injuries 134 other forms of violence 476, all other diseases 4,267.

Morbidity.—Month of February, 1912. Total number of cases of communicable diseases reported, 11,988, including anterior poliomyelitis 4, anthrax 1, cerebrospinal meningitis 14, chicken pox 1,530, diphtheria 1,139, erysipelas 192, German measles 39, malarial fever 6, measles 3,569, mumps 887, pneumonia 837, puerperal fever 2, scarlet fever 949, smallpox 35, tetanus 4, trachoma 1, tuberculosis 1.145 typhoid fever 575, whooping cough 1,069.

FOREIGN AND INSULAR.

SANITARY SURVEILLANCE OF VESSELS AT MEXICAN PORTS.

Under the provisions of section 2 of the act of February 15, 1893, "An act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service," Acting Asst. Surg. J. A. Campbell has been assigned to duty in the office of the American consul at Vera Cruz, and Acting Asst. Surg. C. Milo Brady has been detailed in the office of the American consul at Tampico.

Under this assignment these officers will sign bills of health in connection with the American consuls, and during the close quarantine season will fumigate vessels destined to United States ports, prior to their departure from the above-named ports. They will also transmit regularly information concerning the sanitary status of said ports and the country contiguous thereto.

BRAZIL.

Bahia—Yellow Fever.

Vice Consul Mueller reports March 25 the occurrence of 6 cases of yellow fever, with 1 death at Bahia.

CHILE.

Yellow Fever.

Consul Winslow at Valparaiso reports April 6: Yellow fever is still reported prevalent at Tocopilla, with a total to date of 90 cases, with 25 deaths.

CHINA.

Hongkong—Plague—Smallpox.

Surg. Brown reports: During the week ended March 16, 1912, 10 cases of plague, with 9 deaths, and 36 cases of smallpox, with 27 deaths, were reported at Hongkong, and during the week ended March 23, 20 cases of plague, with 18 deaths, and 30 cases of smallpox, with 25 deaths.

Plague-infected Rats.

During the two weeks ended March 23, 1912, 3,804 rats were examined for plague infection. Three plague-infected rats were found.

GREECE.

Cerebrospinal Meningitis.

Consul General Gale reports: During the week ended April 6, 180 cases of cerebrospinal meningitis were reported in Greece, occurring in 34 localities and during the week ended April 13, 28 cases occurring in 12 localities. The reports for the week ended April 13 are incomplete.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910. The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred February 9, 1912; 2 fatal cases February 25, 1912; and a fatal case March 18, 1912. During the week ended March 2, 1912, 49 plague-infected rats were found. The last plague-infected rat was found April 17, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-prevention Work.

Chief Quarantine Officer Trotter reports:

Week ended Apr. 13, 1912.

Total rats and mongoose taken	544
Rats trapped	538
Mongoose trapped	6
Rats examined bacteriologically	460
Classification of rats trapped:	
Mus alexandrianus	26
Mus musculus	96
Mus norvegicus	43
Mus rattus	373
Average number of traps set daily	1,720

ITALY.

Rome—Smallpox.

According to information received from the American Embassy, smallpox was reported present in Rome during the three months ended March 31, 1912, as follows: January, 4 cases with 1 death; February, 16 cases with 2 deaths; March, 11 cases.

Examination of Emigrants.

Passed Asst. Surg. Robinson, at Naples, reports:

Vessels inspected at Naples, Messina, and Palermo, week ended April 20:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Apr. 15	San Guglielmo	New York			
18	do	do	1,252	140	1,380
19	Mendoza	do	726	55	960
19	Konig Albert	do	1,181	145	1,620
	Total		3,159	340	3,950

MESSINA.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Apr. 16	San Guglielmo	New York	343	69	459

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Apr. 17	Alice	New York			
17	San Guglielmo	do	387	300	200
18	Mendoza	do	95	130	50
	Total		482	430	250

MEXICO.

Typhus Fever.

At Acapulco, Consul Edwards reports the occurrence of 1 death from typhus fever during the week ended April 13.

At Aguascalientes Consul Schmutz reports 1 new case of typhus fever and 4 deaths from the same disease for the week ended April 21.

At Saltillo the American consul reports May 3 the presence of 5 cases of typhus fever.

RUSSIA.

Typhus Fever.

At Moscow Consul General Snodgrass reports the occurrence of 7 cases of typhus fever with 3 deaths.

At Odessa Consul Grout reports the occurrence of 52 cases of typhus fever with 2 deaths during the week ended March 30.

VENEZUELA.

La Guaira—Yellow Fever.

Acting Asst. Surg. Stewart reports: During the two weeks ended April 1, 2 deaths from yellow fever occurred at La Guaira.

WEST INDIES.

Trinidad—Plague.

The American consul reported May 1 the presence of a case of plague at Port of Spain.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING THE WEEK ENDED MAY 10, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Mar. 10-16	3	2	
Moulmine	do	2	2	
Indo-China:				
Saigon	Mar. 12-18	24	16	
Siam:				
Bangkok	Jan. 28-Mar. 24		489	
Turkey in Asia:				
Aleppo	Apr. 6-13	5	2	

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Venezuela:				
La Guaira	Mar. 17-Apr. 1	2	2	

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Chile:				
Iquique	Mar. 24-Apr. 6	3		
China:				
Hongkong	Mar. 10-23	30	27	
Peru:				
Salaverry	Mar. 27-Apr. 3	2		
Trujillo	Apr. 10			22 cases in the lazaretto.
Siam:				
Bangkok	Feb. 25-Mar. 23		2	
Straits Settlements:				
Singapore	Mar. 3-16	2	1	
Trinidad				
Port of Spain	May 1	1		
Venezuela:				
Caracas	Mar. 27-Apr. 13		2	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Galicia	Mar. 31-Apr. 6	3		
Trieste	do	1		
Canada:				
Hamilton	Apr. 21-27	8		
Montreal	do	3		
Ottawa	Apr. 14-20	6	1	
Quebec	Apr. 21-27	13		
Vancouver	Apr. 14-20	1		
Winnipeg	do	1		
China:				
Dalny	Mar. 24-30	1		
Hongkong	Mar. 10-23	66	52	
Germany	Apr. 14-20	16		
Hamburg	Apr. 7-13	1		
Great Britain:				
London	Apr. 7-20	2		
Indo-China:				
Saigon	Mar. 12-18	1		
Italy:				
Genoa	Apr. 1-15	2		
Naples	Apr. 14-20	3		
Palermo	Apr. 7-13	16	5	
Rome	Jan. 1-31	4	1	
Do	Feb. 1-29	16	2	
Do	Mar. 1-31	11		
Mexico:				
Juarez	Apr. 21-27	2		
San Luis Potosi	Feb. 18-24	2	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended May 10, 1912.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Russia:				
Libau	Apr. 8-14	1		
Odessa	Mar. 24-Apr. 6	3		
Riga	Mar. 17-Apr. 13	11		
Warsaw	Feb. 18-24	13	2	
Siam:				
Bangkok	Jan. 28-Mar. 23		849	
Spain:				
Cadiz	Mar. 1-31		2	
Straits Settlements:				
Singapore	Mar. 3-16	4	2	
Turkey in Europe:				
Constantinople	Apr. 8-14		21	

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAY 8, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, vol. 1.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-Mar. 9	113	94	
Calcutta	Nov. 5-Mar. 16		944	
Madras	Nov. 26-Mar. 30	548	446	Madras Presidency, Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545; Jan. 1-Feb. 29: Cases, 18,267; deaths, 11,563.
Moulmine	Feb. 18-24	2	2	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Feb. 29	104	86	
Indo-China:				
Saigon	Nov. 20-Mar. 4	1,520	1,066	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 3, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands				Third quarter, 1911: Manila 1, fatal case; Provinces, 27 cases and 22 deaths. Fourth quarter, 1911: Manila, no case and no death; Provinces, 22 cases, 20 deaths.
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 96; deaths, 51, including report, p. 2096, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Jan. 27		755	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2-Mar. 20	21	5	
Aleppo	Jan. 26-Mar. 9	36	23	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14-26	29		
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 3, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Mar. 23-25	6	1	
Ceara	Jan. 1-Feb. 29		5	
Manaos	Nov. 19-Mar. 30		54	
Para	Mar. 3-9	2	2	Dec. 9-16: 1 fatal case.
Pernambuco	Jan. 1-Mar. 15		14	
Canal Zone:				
Culebra Island quarantine	Jan. 1-31	1		From a vessel from Guayaquil.
Chile:				
Tocopilla	Apr. 11	90	25	And vicinity.
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Feb. 29	13	6	
Guayaquil	Nov. 16-Feb. 29	118	54	
Huigra	Feb. 1-29			1 case.
Milagro	do	16	7	
Naranjito	do	2	2	
Yaguachi	do			1 case.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb. 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida	Nov. 12-Mar. 23	20	9	Total Aug. 1-Mar. 23: Cases, 65; deaths, 29.
Puerto Mexico (Coatzacoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Feb. 15	30	13	
Macuto	Mar. 16-19	1	1	
Maiquetia	Feb. 24-Mar. 9	3	1	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Arabia:				
Aden	Mar. 5-25	2	1	
Azores:				
Fayal	Jan. 10			Still present.
Terceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Apr. 6	20	13	
Pernambuco	Oct. 1-Feb. 29		9	
Rio de Janeiro	Nov. 12-Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12-Mar. 27	21	11	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Chaochowfu	Mar. 10-16			Present.
Hongkong	Dec. 9-Mar. 9	50	44	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1,817; deaths, 1,324. Dec. 31-Feb. 9: Cases, 65, deaths, 63.
Pasoeroean Residency, Malang District.	Nov. 12-Mar. 23	116	72	
Soerobaya	Oct. 17-27	2		
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Reports not available because of revolution.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 3, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Alexandria	Mar. 22	1	1	
Provinces—				
Assiout	Jan. 1-Mar. 22	50	32	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	Jan. 1-Mar. 22	29	18	
Behera	Jan. 1-Mar. 16	4	2	Sept. 11-16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16-Apr. 4	23	7	
Fayoum	Jan. 1-26	1		
Galioubeh	Jan. 1-Mar. 10	4	3	Oct. 5-Dec. 26: Case, 1.
Garbieh	Jan. 1-Mar. 17	18	8	
Girgeh	Mar. 28	1	1	
Kena	Jan. 1-Apr. 4	69	51	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2-Mar. 7	3	1	
Minieh	Jan. 1-Apr. 4	22	4	Dec. 13: Case, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-Mar. 23	419	375	
Calcutta	Nov. 11-Mar. 16		196	
Karachi	Nov. 26-Mar. 30	547	468	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Feb. 29	166	158	
Bombay Presidency and Sind.	Oct. 29-Mar. 23	58,396	42,824	
Madras Presidency	do	10,129	7,869	
Bengal	do	37,491	31,764	
United Provinces	do	86,612	76,987	
Punjab	do	10,541	8,082	
Burma	do	1,428	1,302	
Eastern Bengal and Assam.	Jan. 1-Feb. 24	2	2	
Central Provinces	Oct. 29-Mar. 23	26,600	21,144	
Coorg	do	88	52	
Mysore State	do	8,631	6,688	
Hyderabad State	do	25,820	23,394	
Central India	do	9,096	7,453	
Rajputana and Ajmere Merwara.	do	1,533	1,234	
Kashmir	Feb. 3-Mar. 23	114	51	
North West Province	Oct. 29-Feb. 24	2	2	Total for India, Oct. 29-Mar. 23: Cases, 276,483; deaths, 228,848. Total year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Mar. 4	33	5	
Japan:				
Formosa	Mar. 7-16	13	7	
Mauritius	Nov. 3-Feb. 22	70	36	
Persia:				
Bushire	Feb. 4-Mar. 2	31	14	
Peru:				
Departments—				
Callao	Oct. 1-21	1		City, in November, 1 case; in January, 3 cases with 2 deaths; Mar. 1-26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Mar. 13, 30 cases in the lazaretto at Trujillo.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on p. 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Jan. 27		3	
South Africa:				
Durban	Jan. 14-Apr. 5			Total: Cases 24, deaths 19.
Straits Settlements:				
Singapore	Nov. 5-Feb. 24	27	24	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 3, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia:				
Basra	Feb. 13	1	1	A stoker on a vessel from Bushire.
Jiddah	Jan. 13-Mar. 13	9	5	
Venezuela:				
Caracas	Mar. 12	1		Apr. 22, present.
West Indies:				
Trinidad	Apr. 2-26	5		
At sea	Mar. 1-11	1	1	On s. s. Macedonia from Bombay to Aden.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Mar. 25	18	9	And vicinity.
Argentina:				
Buenos Aires	Jan. 1-31		2	Oct. 1-31, 6 deaths. No deaths in Nov. or Dec., 1911.
Rosario	Oct. 1-Jan. 31		40	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	2		
Budapest	Jan. 4-10	25		
Galicia	Dec. 24-Mar. 30	25	1	
Krain	Jan. 14-20	7		
Trieste	Dec. 3-9	1		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-Mar. 9	3		
Vienna	Mar. 25-30	1		
Brazil:				
Bahia	July 1-31		1	
Para	Mar. 24-Apr. 6	2	1	Case Mar. 30 from Alagoas.
Pernambuco	Oct. 1-Mar. 15		732	
Rio de Janeiro	Nov. 26-Mar. 2	28	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 16	5		
Nelson	Dec. 24-30	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-Apr. 13	3		
Nova Scotia—				
Halifax	Mar. 24-Apr. 6	2		
Ontario—				
Hamilton	Apr. 14-20	8		
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Mar. 23	91		
Sarnia	Oct. 17-Mar. 23	43		
Toronto	Jan. 6-Mar. 24	3	1	
Windsor	Feb. 4-Mar. 16	8		
Quebec—				
Montreal	Dec. 17-Apr. 13	24		
Quebec	Dec. 10-Apr. 13	270	2	
Yukon—				
Dawson	Apr. 1-6	1		
Ceylon:				
Colombo	Nov. 12-Feb. 10	3		And vicinity.
Chile:				
Iquique	Dec. 10-Mar. 16	4	2	
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Mar. 9	68		Feb. 17—Decreasing.
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chaochowfu	Mar. 30			Present.
Chenghai	Jan. 29-Mar. 30			Do.
Chungking	Nov. 18-Mar. 16			Do.
Dalny	Mar. 3-23	9	2	
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-Mar. 9	558	414	
Kityang	Jan. 21-Mar. 30			Do.
Nanking	Dec. 10-Mar. 30			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 3, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Cuba:				
Habana	Dec. 19–Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12–Mar. 23	48	13	
Egypt:				
Cairo	Dec. 10–Mar. 25	10	1	
Port Said	Jan. 30–Feb. 4	1		
France:				
Havre	Mar. 10–16		4	
Marseille	Jan. 1–Mar. 31		5	Nov. 1–30, 1 death.
Paris	Dec. 3–Apr. 6	118	2	
Germany				Total, Dec. 31–Apr. 13: Cases, 101
Hamburg	Jan. 21–Apr. 6	3		
Gibraltar	Feb. 27–Mar. 3	1		
Great Britain:				
Bristol	Jan. 29–Feb. 3	2		
Liverpool	Mar. 17–Apr. 17	2	1	Case Apr. 13, an American from the s. s. Arabic.
London	Jan. 14–Apr. 6	8	1	
Southampton	Mar. 3–9	1		
West Hartlepool	Feb. 18–Mar. 9	2		
India:				
Bombay	Nov. 19–Mar. 23	637	216	
Calcutta	Nov. 19–Mar. 16		26	
Madras	Nov. 26–Mar. 30	179	71	
Rangoon	Oct. 1–Feb. 29	220	55	
Indo-China:				
Saigon	Nov. 13–Mar. 4	37	7	
Italy:				
Genoa	Dec. 1–Mar. 15	45	2	
Leghorn	Dec. 16–Apr. 13	101	1	
Messina	Nov. 19–Jan. 31		6	
Naples	Dec. 3–Apr. 13	97	1	
Palermo	Nov. 26–Apr. 6	2,614	890	
Turin	Jan. 15–Apr. 7	2		
Japan:				
Arima-Mura	Nov. 12–18	6	1	11 miles east from Kobe.
Formosa	Mar. 3–16	3		
Kanagawa, ken	Dec. 17–23	1		
Kobe	Jan. 22–28	2	1	Jan. 20, 1 case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12–18	1		
Nogahama	Mar. 17–23	1		On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Malta	Dec. 24–Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18–Mar. 3		7	
Chihuahua	Nov. 20–Feb. 11	92	36	
Coahuila, State	Oct. 1–30		16	
Guadalajara	Jan. 14–Apr. 13	8	4	
Juarez	Dec. 19–Mar. 9	14	5	
Magdalena	Dec. 23–Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18–24	1		
Mazatlan	Dec. 11–Mar. 19		11	Mar. 16, 25 cases in the lazaretto.
Mexico	Nov. 26–Mar. 2	167	79	
Monterey	Dec. 11–24		2	
Porfirio Diaz	Dec. 3–Mar. 23		35	
Salina Cruz	Feb. 11–Mar. 9	4	2	Mar. 23, present in vicinity.
San Antonio	Jan. 1–21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21–27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12–Feb. 10	4	1	
Tampico	Dec. 1–Mar. 30		15	
Tapachula	Nov. 1–Jan. 31		18	
Philippine Islands				Third quarter, 1911: Manila, 9 cases; no deaths. Fourth quarter, 1911: 38 cases.
Portugal:				
Lisbon	Dec. 9–Apr. 13.			

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 3, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia:				
Batum	Dec. 1-31	1		
Libau	Dec. 17-23	1		
Moscow	Nov. 19-Mar. 23	52	8	
Odessa	Nov. 26-Mar. 23	31	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-Jan. 27	16		Oct. 1-Dec. 30; deaths, 4.
St. Petersburg	Nov. 19-Mar. 23	170	36	
Warsaw	Nov. 5-Feb. 17	377	183	
Siam:				
Bangkok	Nov. 5-Jan. 27		1,326	
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-Feb. 24	4		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Barcelona	Feb. 6-12		1	
Cadiz	Nov. 1-Feb. 29		27	
Madrid	Dec. 1-Mar. 31		16	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-Mar. 31		10	
Valencia	Dec. 3-Apr. 13	371	16	
Straits Settlements:				
Penang	Feb. 11-17	1		
Singapore	Nov. 19-Mar. 2	32	11	
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Apr. 6		53	
Turkey in Asia:				
Beirut	Dec. 3-Mar. 30	1,475	107	
Turkey in Europe:				
Constantinople	Dec. 4-Apr. 7		141	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Apr. 6	163,084	49									1		
Aguascalientes	Apr. 21	40,000	63	3					3			1	4	
Amsterdam	Apr. 13	582,586	103	21								2	3	
Antwerp	Apr. 6	316,604	66	5									3	
Barcelona	..do	591,271	240	34						5			1	
Do	Apr. 13			36						5		3		
Basel	Apr. 6	138,000	27	5								1		
Belfast	Mar. 16	385,492	147	27								1		4
Do	Apr. 6		145	13					1			1		
Do	Apr. 13		147	16										9
Belgrade	..do	90,050	47								4	1		
Berlin	Mar. 23	2,085,857	576	82						1	7	12	5	8
Do	Mar. 30	2,086,127	575	85						1	4	11	11	8
Do	Apr. 6		521	68						1	2	11	5	4

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Birmingham	Apr. 13	842,512	203							1	1	1	1	14
Bordeaux	..do	253,000	94	13									6	
Do	Apr. 20		103	11						2		3	7	
Bradford	Apr. 13	289,618	95	9						1		2	1	
Bremen	Mar. 30	246,850	75	19							2	1	1	2
Brunswick	Apr. 6	145,000		3								1	6	
Brussels	..do	649,846	164	14							13	8		
Do	Apr. 13	739,684	176	24								2	2	1
Budapest	Mar. 30	1,000,000									2	2	5	1
C iro	Mar. 25	689,439	371	19					1	2			2	
Calcutta	Mar. 16	890,493	553	31	106	79		1					2	
Catania	Apr. 12	207,000	85	4							2	2	1	
Do	Apr. 19								1		1	1		1
Chemnitz	Apr. 6	299,000	81	6								1		
Christiania	..do	246,000	118	14								1		1
Do	Apr. 13		101	12								2		
Cologne	Apr. 6	527,663	128	25							2		1	
Copenhagen	Mar. 30	465,000	145	21									2	1
Dalny	..do	45,539	27	1							2			
Dresden	..do	556,200	139	30								3		1
Dublin	Apr. 30	406,536	216	35								1	14	2
Dundee	Apr. 13	171,006	55	3								2	2	1
Edinburgh	Apr. 6	321,200	113	7									4	1
Do	Apr. 13		99	9									10	
Fiume	..do	51,500	25	10										1
Frankfort on the Main	Mar. 30	423,600	96	5								1		4
Glasgow	Apr. 19	782,110	254						1	1	1	3	15	
Gothenburg	Apr. 6	170,100	33	8										1
Guadalajara	Apr. 13	119,468	97					2						
Do	Apr. 20		98	1						3				
Halifax	Apr. 19	46,000	23								1	1		
Hamburg	Apr. 6	953,079	266	35							1	4	2	6
Kingston	Apr. 13	59,584		1						2				
Kobe	Mar. 31	418,646	118							1		1		
Konigsburg	Mar. 30	252,200	92	9							1			2
Do	Apr. 6		102	20								1	2	
Kurrachee	Mar. 30	159,270	147		68								16	
La Guaira	Mar. 31	10,000	29	8			2							
Leeds	Apr. 13	445,568	121								1	2	1	
Leipzig	Mar. 30	605,755	135	23						1				3
Do	Apr. 6		138	25								1		2
Leith	Apr. 13	81,000	21	1								1	3	1
Liege	Apr. 6	167,643	56	6									4	1
Liverpool	Apr. 13	752,055	249	22				1			2	4	9	7
London	...do	7,340,125	1,726							2	3	16	30	5
Lubeck	...do	100,000	28	3						1		1		
Madras	Mar. 30	518,660	352			6		6		1			4	
Manaos	...do	52,000	47	4					3					
Do	Apr. 6		48	5					2					
Manchester	Apr. 13	714,427	219	20							1	1	14	15
Mannheim	Mar. 23	200,200	49	3							1		1	
Do	Mar. 30	201,201	39	5										1
Mazatlan	Apr. 16	22,000	17					2						
Monterey	Apr. 21	100,000	55	7						1	2	1	1	
Montreal	Apr. 20	466,197	205	26						3	2	1		1
Do	Apr. 27		190	24						4	2	1		3
Moscow	Mar. 23	1,500,000	766	115				3	3		18	11	15	9
Munich	Mar. 30	610,000	175	19									3	
Nantes	Apr. 7	170,525	71	18						2		1		
Newcastle-on-Tyne	Apr. 13	269,193	79	9								1		
Nottingham	Apr. 6	260,000	88	9								1	9	3
Nuremberg	Mar. 9	334,797	105	16								2	2	2
Do	Mar. 16		91	11										
Odessa	Mar. 30	575,000	179	32					2	1		2	1	1
Palermo	Apr. 6	340,000	142	6				5				1		
Para	..do	185,000	84	8	2									
Palermo	Apr. 13	340,000	159	14				5						1
Paris	Apr. 6	2,888,110	1,027	249						5	5	7	31	8
atras	Apr. 7	40,000	11	3						1				
t of Spain	Mar. 30	60,000	28	7						1				

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Port of Spain	Apr. 6		26	6						1			1	
Port Said	Mar. 25	52,811	22	2								1		
Prague	Mar. 30	225,204	90	17						1		2	2	1
Do	Apr. 6		86	12								2	4	
Rangoon	Mar. 23	293,316	177	3	14	3		12						
Rio de Janeiro	Mar. 2	921,987	381	66						4		1	2	5
Do	Mar. 9		349	66									5	5
Do	Mar. 16		353	59						1			3	5
Rotterdam	Apr. 13	438,774	99									1		
Saigon	Mar. 18	220,000				16								
St. John, N. B	Apr. 20	40,711	27								1	1		
St. Petersburg	Mar. 30	907,708	812	141				8		11	16	8	16	8
San Luis Potosi	Feb. 17	82,476	35	3						4				
Do	Feb. 24		57	3				1		2				1
Santa Cruz deTeneriffe	Apr. 6	46,000	12	2				1						
Santiago de Cuba	..do....	53,614	23	2						1				
Do	Apr. 13		23							1				
Santos	Jan. 28 Feb. 10	85,000	81	7									1	1
Do	Feb. 24		77	2						1				1
Do	Mar. 2		36	10						1				
Shanghai	Mar. 24	500,000	194	21							6	4	35	
Singapore	Mar. 9	303,328	172	27				2		2				
Do	Mar. 16		175	30	1									
Southampton	Apr. 13	120,891	33	1						1				3
Stettin	Apr. 6	240,000	64	4								1	2	
Stockholm	Mar. 30	343,832	106	21									2	2
Do	Apr. 6		114	18								2	4	2
Stoke-on-Trent	Apr. 13	217,753	53	3							1			
Swansea	Mar. 30	117,150	35	5								1	1	4
Do	Apr. 6		33	1							1	1	1	
Do	Apr. 13		29	2									1	
Trieste	Mar. 30	232,822	103									1		
Do	Apr. 6	235,999	105										2	2
Tripoli-in-Barbary	Apr. 7	50,000	72	4					1	8				
Turin	Apr. 14	430,770	141	13						2		2	1	2
Valencia	Apr. 6	235,000	90	3				1						
Do	Apr. 13		92	4										
Vancouver	..do....	110,000	19									1	1	
Do	Apr. 20		21	2									1	
Vienna	Mar. 30	2,064,583	712	125						1	4	7	8	4
Warsaw	Feb. 24	797,093	250	28				2			7		2	1
Winnipeg	Apr. 20	151,958	63	3							4	1	1	
Yokohama	Apr. 8	444,039										1		

MORTALITY–FOREIGN AND INSULAR COUNTRIES AND CITIES (Untabulated).

ALGERIA—*Algiers.*—Month of March, 1912. Population, 172,397. Total number of deaths from all causes 361, including diphtheria 3, tuberculosis 72, typhoid fever 3.

FRANCE—*Marseille.*—Month of March, 1912. Population, 550,619. Total number of deaths from all causes 879, including diphtheria 3, smallpox 1, tuberculosis 164, typhoid fever 8.

Roubaix.—Month of March, 1912. Population, 122,723. Total number of deaths from all causes 175, including diphtheria 2, scarlet fever 1, tuberculosis 27.

GREAT BRITAIN.—Week ended April 6, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 14 per 1,000 of the population, which is estimated at 17,639,830.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 20.9 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Queenstown, viz, 6.6, and the highest at Wexford, viz, 36.4 per 1,000.

INDIA—*Rangoon.*—Month of February, 1912. Population, 293,316. Total number of deaths from all causes 878, including cholera 16, smallpox 28, tuberculosis 31, typhoid fever 3.

ITALY—*Florence.*—Month of March, 1912. Population, 239,295. Total number of deaths from all causes 335, including diphtheria 3, measles 24, tuberculosis 43, typhoid fever 1.

JAPAN—*Formosa.*—Two weeks ended March 9, 1912. Population, 3,341,217. Total number of deaths from all causes not reported. The deaths include diphtheria 4, typhoid fever 6.

PORTUGUESE EAST AFRICA—*Lourenço Marquez.*—Month of December, 1911. Population, 10,000. Total number of deaths from all causes 48, including tuberculosis 12, typhoid fever 2.

SOUTH AFRICA—*Johannesburg.*—Two weeks ended March 23, 1912. Population, 237,220. Total number of deaths from all causes 171, including diphtheria 2, tuberculosis 26, typhoid fever 10.

SPAIN—*Cadiz.*—Month of March, 1912. Population, 67,306. Total number of deaths from all causes 203, including smallpox 2, tuberculosis 27, typhoid fever 1.

Seville.—Month of March, 1912. Population, 158,235. Total number of deaths from all causes 377, including diphtheria 2, measles 1, smallpox 2, tuberculosis 70, typhoid fever 1.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS

VOL. XXVII. MAY 17, 1912. No. 20.

QUARANTINE CIRCULAR.

Treasury Department,
Bureau of Public Health
and Marine-Hospital Service,
Washington, May 13, 1912.

To medical officers in command, and acting assistant surgeons in charge, United States quarantine stations.

Sir: You are directed until further notice to treat vessels arriving from any Mexican port, with the exception of Progreso, in accordance with paragraph 105, section A, of the quarantine regulations. Vessels from Progreso are to be given special treatment as follows:

1. When no passengers are carried, such vessels are to be simply inspected upon arrival at New Orleans, unless special reasons exist for further treatment; but this is with the understanding that said vessels have complied with the following conditions:
2. Vessels to carry a competent physician recommended by the quarantine officer at the United States port of arrival, and as stated above, to carry no passengers.
3. Loading and unloading to take place at the end of the long wharf reaching far out into the open sea at Progreso, and the loading to be done exclusively by daylight.
4. Vessels to be fumigated at Progreso just prior to sailing, by the traveling physician, said fumigation, done for the destruction of mosquitoes, to apply especially to the superstructure.
5. The personnel of vessels to remain on board during the stay in Progreso.

In the event that vessels carry passengers from Progreso, they are to be handled under paragraph 105 and subdivisions of the quarantine regulations of 1910, in addition to the treatment above mentioned.

Respectfully,

Rupert Blue,
Surgeon General.

THE COMMON DRINKING CUP.

Several States and cities have enacted laws or adopted regulations regarding the use of common drinking cups in public or semipublic places. In this connection the following quotation from a report made by Dr. Henry Albert, State bacteriologist of Iowa, appearing in the quarterly bulletin of the Iowa State Board of Health (Vol. XXV, No. 2), is of interest:

> Microscopic examinations of 22 common drinking vessels from public places were made. The vessels were obtained from two different cities in Iowa, in one of which there were a large number of cases of diphtheria. The vessels were obtained from the following kinds of places: six from hotels, 1 from a courthouse, 1 from a cigar store, 1 from a railway car, 12 from public schools, and 1 from a public well.
>
> The following represents the kinds of disease-producing bacteria and the number of cups on which such were found: Diphtheria bacilli on 2 (both cups were from schoolhouses of a city in which there were a large number of cases of diphtheria); pus-producing bacteria on 17; pneumococci (the germs of pneumonia) on 3; micrococcus catarrhalis (the germ which frequently produces colds) on 7. In addition, 7 of the cups contained epithelial cells and mucus from the mouth.

The Iowa State Board of Health at a meeting held in October, 1911, adopted the following regulation:

> Whereas it has been demonstrated that common drinking cups are frequently contaminated with disease-producing germs and, as a medium for the transmission of contagious and infectious diseases, they are a source of danger to the public health; and
>
> Whereas individual or private drinking cups may readily be provided in such places where most needed: Therefore,
>
> Under the authority of the statute imposed upon the State board of health to promulgate rules and regulations relative to the preservation of the public health in contagious and infectious diseases and the prevention of the same, the use of the common drinking cup in all public places such as parks, streets, schoolhouses, hotels, factories, workshops, libraries, railway stations and cars, and all other public places is hereby prohibited from and after January 1, 1912.

INVESTIGATIONS OF AND TICK ERADICATION IN ROCKY MOUNTAIN SPOTTED FEVER.

A REPORT OF WORK DONE ON SPOTTED FEVER IN COOPERATION WITH THE STATE BOARD OF HEALTH OF MONTANA.

By Thomas B. McClintic, Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

INTRODUCTION.

Rocky Mountain spotted fever has prevailed in Montana and Idaho for at least several decades. The earliest available record of the disease having been reported was in the year 1873. Cases of the disease have from time to time occurred in other States until now Rocky Mountain spotted fever has been reported from practically all of the Rocky Mountain States, including Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

Although the disease is far more prevalent in Montana and Idaho than in any of the other States, its spread has assumed such proportions in the last decade as to call for the gravest consideration on the part of both the State and national health authorities. In fact, the disease has so spread from State to State that it has undoubtedly become a very serious interstate problem demanding the institution of measures for its control and suppression. There is, however, a marked variation in the severity of the disease in different localities, notably in Montana, as compared with Idaho. Particularly in the Bitter Root Valley in Montana the mortality rate is very high, while in Idaho it is comparatively low.

The reason for this variation in severity still remains an unsolved problem. On account of its persistent seasonal prevalence and severity the disease has become a very serious public health and economic problem in the Bitter Root Valley, where, in addition to the lives that are annually sacrificed, very valuable agricultural lands have depreciated in value and in certain localities have been almost abandoned on account of the fear and dread that the inhabitants have of Rocky Mountain spotted fever.

For several years the State Board of Health of Montana has been carrying on a campaign of investigation with the purpose in view of eradicating, if possible, the disease from that State. It has had the services of such workers as Wilson and Chowning of the University of Minnesota; Ashburn, Craig, and Keifer of the Army; Cobb, Anderson, Stiles, Francis, and King of the Public Health and Marine-Hospital Service; and, finally, Ricketts and his associates.

The State Legislature of Montana early in 1911 made an appropriation for continuing the work for a period of two years, and at the request of the State board of health, through its secretary, Dr. T. D. Tuttle, the work was again taken up by the Public Health and Marine-Hospital Service in May, 1911. It at once became evident that the rational lines along which the work should be carried were in accordance with those laid down by Dr. H. T. Ricketts. While the appropriation available was not large enough to allow the taking up of the work on an extensive scale, nevertheless it was apparently sufficient, exclusive of the officers' salaries which were paid by the Treasury Department, for determining or making a demonstration as to the feasibility of eradicating the tick, *Dermacentor andersoni* Stiles, the real causative agent concerned in the transmission of Rocky Mountain spotted fever. It was therefore decided to select a limited area in one of the worst infected territories and to put into operation the best-known measures for the eradication of the tick. It was also considered advisable to continue Ricketts's work of testing the susceptibility of the wild mammals to experimental inoculation with spotted fever and to search for the infection of that disease among the wild mammals in nature.

Accompanied by Dr. Tuttle, I arrived in the Bitter Root Valley the latter part of May, and after looking over the situation in the valley it was decided to carry on the work in the vicinity of Victor, Mont. An infected territory of about 8 square miles was selected about 3 miles from Victor. It is situated in the foothills of the mountains on the west side of the valley and has its boundaries rather well defined on the north and south by Sweathouse Creek and Bear Creek, respectively. In this territory the ticks are found in large numbers during the tick season, and many cases of spotted fever have been reported from there during past years; in fact this territory has been almost depopulated because of the presence of spotted fever. From this district Ricketts, during the season of 1908, collected ticks with which he was able to infect guinea pigs.

As most of the cases of spotted fever occur in the Bitter Root Valley during the months of April and May it will be seen that the latter part of May was very late in the season to begin the work. It was decided, however, that a start should be made and that the work could again be taken up at the beginning of the tick season of the next year. The ticks begin to decrease in number during the month of June, and by the first of July they have largely disappeared. Throughout most of the year it is, however, possible to find, from time to time, a few ticks in certain localities.

The work was carried on at Victor until August 7, when it was transferred to the Hygienic Laboratory at Washington, where the laboratory side of the work was continued.

About the middle of June, Passed Asst. Surg. W. C. Rucker was detailed to assist in the work.

As the State of Montana made the appropriation for conducting this investigation, the work is being done in conjunction with the State board of health. Dr. T. D. Tuttle, secretary of the board, has heartily cooperated in every way possible and in an advisory capacity has rendered valuable service in outlining the work and in furthering its success.

The studies of Dr. Ricketts on spotted fever have been of the greatest value, and it has been endeavored to take up the work where he left off and to continue it by putting into effect his plans and recommendations.

The work as contemplated, and as carried on, may be embraced under two general headings as follows:

1. The eradication of the tick.
2. Laboratory investigations.

ERADICATION OF THE TICK.

Ricketts and others having fully established the important rôle played by the tick, *Dermacentor andersoni,* in the transmission of Rocky Mountain spotted fever, it is at once evident that measures for the suppression and prevention of the disease must necessarily be directed along the line of the eradication of the tick.

As the seasonal prevalence of the tick is largely limited to the months of March, April, May, and June, that season is usually known as the "tick season" in the Bitter Root Valley. During the remainder of the year the tick is found only sparingly and the occurrence of cases of spotted fever is consequently rare during this time. On the other hand, during the tick season, particularly in April and May, the tick is found in large numbers, and considering the general topography of the valley and bearing in mind that the disease is found from the foothills to the top of the mountains, it will be seen that its complete eradication from the Bitter Root Valley is an impossible undertaking. The valley is about 100 miles long and is formed by two ranges of the Rocky Mountains that in places reach an altitude of eight to nine thousand feet. The ranges bounding the valley are intersected at intervals by deep gorges or canyons and the mountains in places are very precipitous and almost impassable. While the valley narrows down to a deep gorge toward its southern extremity, throughout most of its length it varies in width from a few miles to about 25 miles.

The tick is seldom found on the cultivated lands of the valley, but is largely restricted to the forested foothills and mountains. Both in point of numbers and variety of species the fauna of the valley is excelled by very few other localities of similar size in the United States, and most of the mammals, both wild and domestic, harbor the tick in one form or another. It is therefore evident that the dipping of the domestic stock alone will not eradicate the tick from the valley completely. There is no doubt, however, that it will greatly reduce the number of ticks, and in consequence will both minimize the chances of inhabitants becoming infested with ticks and of ticks being carried to the vicinity of, or into, dwellings by persons or domestic animals.

The measures put into force for the eradication of the tick in the infected territory selected for demonstrative purposes were as follows:

A. Dipping of the domestic animals known to harbor the tick.

B. Killing of the wild mammals.

DIPPING OF DOMESTIC STOCK.

An area of about 8 square miles conveniently located in the infected territory was selected. In this area a dipping vat was constructed. The vat was made of concrete according to the plans given in Farmers' Bulletin No. 378.[1] It has a depth of 9 feet and is about 38 feet long at the water line. When using the vat it is filled with dipping fluid to a depth of 5 feet 5 inches. With this depth of fluid, all of the stock, with the possible exception of a few large horses, are completely immersed upon going down over the slide. The slide was first constructed of concrete, but as it did not become smooth, a boiler-metal slide was later installed. The cost of construction of the vat, including corrals, dripping pens, etc., was about $520. The dipping fluid used is an arsenic preparation, recommended by the Bureau of Animal Industry, Department of Agriculture, and sold under the commercial name of "Tixol." It is used diluted with water to a strength of 1 per cent. The quantity of liquid required to fill the vat to a depth of 5 feet 5 inches is about 2,500 gallons. The construction of the vat was completed June 14 and the dipping of domestic stock begun at once.

The following stock was then dipped:

Horses	116
Cattle	199
Sheep	108

After an interval of about two weeks, on July 3 the redipping of the stock was begun, but as the stock, upon examination, was found to be practically free from ticks the dipping was discontinued after the following stock had been redipped:

Horses	38
Cattle	57
Sheep	60

There were no untoward results following the dipping of the stock in the arsenic dipping fluid, except that one young bullock later showed a marked peeling of the skin. I was informed by the State veterinarian, Dr. Knowles, that this was not a result of the animal having been dipped. The animals were driven to the vat and allowed to remain in the corrals for a half hour or more before they were dipped. After they were dipped they were kept in the corrals until they became dry. It was found necessary to employ the services of a competent man to bring the stock to the vat when the owners were too busy to do so. This will frequently be found to be the case, particularly during the farmer's busy season. Furthermore, considerable difficulty is sometimes encountered in corralling and driving the stock into the vat and consequently the services of a man familiar with the handling of stock are necessary in this capacity.

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[1] H. W. Graybill, Farmers' Bulletin 378, Department of Agriculture, 1909.

Most of the stock owners are willing to have their stock dipped, but a few, as is usually the case in undertakings in the interest of the public health, object to having anything done that causes any inconvenience or work. In this case their objection is usually based on the argument that their stock does not need dipping, or that they do not believe in the tick as a transmitter of spotted fever. To obviate this difficulty a State law should be passed compelling all persons to have their stock dipped in the interest of the public health.

KILLING OF WILD MAMMALS.

It is already known that some of the wild mammals found in the Bitter Root Valley are susceptible to experimental inoculation with spotted fever, while the question as to the susceptibility of the others has not yet been determined. It is also a fact that many of the wild mammals found there harbor the tick in one form or another, so that the killing of these animals serves a twofold purpose.

The ground squirrel (*Citellus columbianus*), commonly known as the "gopher" or "picket-pin," is the predominating animal found in the Valley. This animal is susceptible to experimental infection with spotted fever and is often found harboring the larval and nymphal forms of the tick in large numbers. Its seasonal prevalence coincides rather closely with that of the tick. It goes into hibernation about the first of August, while the tick has largely disappeared by the first of July.

The campaign of destruction of the wild mammals was waged principally against the ground squirrel (*Citellus columbianus*), the pine squirrel (*Sciurus hudsonicus richardsoni*), the yellow-bellied chipmunk (*Eutamias b. luteiventris*), the wood rat (*Neotoma cineria*), the woodchuck (*Marmota flaviventor*), the weasel (*Putorius arizonensis*), and the badger (*Taxidea taxus*).

The methods of killing these animals consisted of shooting, trapping, poisoning, and the use of carbon bisulphide placed in the burrows of the animals. A force of from three to five men was employed in carrying on this work of animal extermination. About 100 to 150 small traps were used. These were set in the burrows of the animals. After the traps had been set for a while and most of the animals caught, the traps were then moved to other burrows and poison (poisoned wheat) placed in the burrows from which the traps were removed. Only 25 gallons of carbon bisulphide were used, but it proved very efficient in killing all mammals that live in burrows. It was used by simply saturating a ball of waste or other material with the liquid and then placing it in the burrow of the animals, after which the mouth of the burrow was closed with a piece of sod or some earth. After all the communicating burrows have thus been treated and closed the carbon bisulphide gas can be exploded, if so desired, by touching a match to the mouth of one of the burrows in which the carbon bisulphide has been placed. It appeared, however, that its efficiency was increased by not exploding the charge, the gas itself being deadly to animal life.

The work of killing wild mammals was begun June 7 and discontinued August 5, during which time the following animals were either shot or trapped in the district selected for carrying on the work:

Ground squirrels (*C. columbianus*)	3, 233
Pine squirrels (*Sciurus h. richardsoni*)	109
Chipmunks (*Eutamias b. luteiventris*)	94
Wood rats (*Neotoma cineria*)	7
Woodchucks (*Marmota flaviventor*)	1
Weasels (*Putorius arizonensis*)	16
Badgers (*Taxidea taxus*)	5
Total	3, 465

The above does not of course include the animals killed with poison or carbon bisulphide, it being impracticable to determinine the number killed by either of these processes.

The following table shows, by weeks, the number of ground squirrels killed by shooting and trapping during the season:

Week ended—	Number of squirrels.	Week ended.	Number of squirrels.
June 10	275	July 15	450
June 17	584	July 22	371
June 24	401	July 31	196
July 1	454	Aug. 5	83
July 8	419		

A glance at the above table will show how the ground squirrels begin to disappear about the middle of July and that by the 1st of August most of them have gone into hibernation.

Unfortunately in waging a campaign of extermination of ground squirrels by shooting and trapping the operator is very much at the mercy of the weather as the squirrels are not inclined to come out of their burrows during inclement or bad weather. Therefore, for purposes of extermination in the future, it is proposed to rely principally upon the use of poison and carbon bisulphide, particularly the latter. During the early season in the Bitter Root Valley, poison and carbon bisulphide can be used, however, to much better advantage for killing mammals that live in burrows than they can later in the season after the green vegetation appears. Naturally, after the vegetation comes out, food becomes plentiful and the animals are not inclined to take the poisoned grain as readily as they do early in the season when food is scarce. Furthermore, after the dense grass, etc., has appeared it is difficult to find all the burrow openings when using carbon bisulphide.

OTHER METHODS THAT MAY BE UTILIZED IN ERADICATING THE TICK.

HAND TREATMENT OF DOMESTIC STOCK INFESTED WITH TICKS.

This should be permissible only in case the use of the dipping vat is not available or under certain circumstances where there are only a small number of gentle stock to be treated, such as, say, a horse and a cow or two. In that case the stock should be carefully searched for ticks every three or four days, or an arsenical dip may be applied by means of a spray, cloth, or otherwise, at least once every 7 days. The principal difficulty in using a dipping fluid by hand is that the ticks are usually found on the under surfaces of the animals where it is more or less difficult to efficiently apply the dipping fluid by hand methods.

BURNING.

There is no doubt that a great many ticks are destroyed by the forest fires that sometimes sweep over the mountains of the Bitter Root Valley. It is largely the immature forms or "seed ticks" that are destroyed, as the fires usually occur in the fall of the year, when it is supposed that most of the ticks are in the transition stage. The forest fires also consume a great deal of débris and undergrowth in which the ticks apparently find conditions most favorable for their protection and life preservation. A great deal could therefore be accomplished in tick eradication by a systematic burning of the mountains every autumn. The practicability of putting such means into effect, however, will have to be left to the opinion and judgment of experts on forest fires. Most of the mountainous land in the Bitter Root Valley belongs to the Forest Reserve, the care of which is under the jurisdiction of the Bureau of Forestry. Forest fires are often hard to control and sometimes cause loss of life. They also destroy a certain amount of valuable timber, but provided the fires can be kept under control the loss through the destruction of timber in the Bitter Root Valley will be small as compared with the loss of life from spotted fever and the depreciation in value of the agricultural lands on account of the presence of that disease. Burning over the foothills early in the spring of the year after the snow melts would destroy a great many ticks and would not endanger property, as the fire then burns slowly and could be controlled. The snow in the mountains would prevent the fire from extending there. The burning, however, should be carried on under the supervision of experts from the Bureau of Forestry, who are familiar with the management and control of forest fires.

CLEARING.

There is a large quantity of tillable land on the west side of the Bitter Root Valley that is not under cultivation. Some of it is still covered with virgin forest, while a portion of it is covered with dense shrubbery and undergrowth. It is on land of this character that the tick is found in greatest numbers, the vegetation seeming to afford it protection. The tick is seldom found on land under cultivation; consequently the clearing and cultivation of the land referred to would practically eradicate the tick therefrom. Of course the clearing of this land should not be attempted during the tick season, but during the other portion of the year when the danger of infection by the tick would be reduced to a minimum.

LABORATORY INVESTIGATIONS.

A STUDY OF THE SUSCEPTIBILITY OF CERTAIN MAMMALS TO EXPERIMENTAL INFECTION WITH ROCKY MOUNTAIN SPOTTED FEVER.

Ricketts worked on the susceptibility of some of the wild mammals in the Bitter Root Valley to infection with spotted fever and proved conclusively that at least several of the species found there are susceptible to experimental infection with that disease. By inoculation with the virus of spotted fever (i. e., blood from an animal, usually the guinea pig, sick with the disease, about the third day of the animal's fever) he was able to infect the ground squirrel, woodchuck, rock squirrel, chipmunk, and mountain rat. With the exception of the mountain rat, he was successful in infecting those animals by the bites of infected ticks, and completed the "tick cycle" in the case of the ground squirrel, woodchuck, rock squirrel and probably the chipmunk. He used the term "tick cycle" to indicate the infecting of an animal by the bite of an infected tick and then the infecting of a fresh tick from the animal so infected.

Although some of the wild mammals in the Bitter Root Valley are known to be susceptible to infection with spotted fever, when they are inoculated with the virus they usually have the disease in such mild form that it is almost unrecognizable from the symptoms produced. Therefore, practically the only reliable method of diagnosing the infection in the mammals referred to consists in the inoculation of blood from the suspected animal into a highly susceptible animal such as the guinea pig, and noting the results in the latter animal.

The rôle, if any, that the wild mammals play in the existence of the infection from year to year or in the spread of the disease has not yet been determined, as the disease has never been found in any of the wild mammals in nature. Practically no pathological lesions are found on post-mortem examination of these animals, even when they are known to be infected with spotted fever.

For the purpose of determining whether or not spotted fever prevails among the wild mammals in nature, it appears that about the only way in which the problem can be approached is through (*a*) a search for the infection in mammals from infected districts by inoculating their blood into guinea pigs, and (*b*) a study of the immunity and susceptibility of mammals from infected districts as determined by inoculating them with the virus of that disease and later making inoculations of their blood into guinea pigs. In the latter case it is assumed, since it has been fairly well established, that an attack of spotted fever in a susceptible animal renders the animal immune to further infection with the disease. For instance, a ground squirrel is susceptible to infection with spotted fever, either by the bites of infected ticks or by inoculation, but it would not be found susceptible to further infection with that disease provided it had already had the disease in nature. The work was undertaken along the lines indicated above. Some work was also done on the neutralizing powers of the blood of some of the wild mammals as determined by mixing it with the virus of spotted fever and injecting the mixture into guinea pigs. Success in this field, however, is handicapped by the fact that even though an animal has had spotted fever and been thus rendered immune the antibodies produced in the blood of the animal do not remain there indefinitely.

THE GROUND SQUIRREL (C. COLUMBIANUS).

The ground squirrels used in this work were captured by the force of men employed in carrying on the campaign of wild mammal extermination in the territory selected for demonstrative purposes. The ground squirrels, therefore, came from a district supposed to be badly infected with spotted fever. As most of the animals were caught in traps they were all more or less injured about the feet and legs. This, of course, was of no consequence provided the animal's blood was simply to be taken and injected into guinea pigs, but when the squirrels were to be injected with the virus of spotted fever it was necessary to keep them until they had recovered from their injuries before they were inoculated.

Search for the infection of spotted fever among the ground squirrels in nature.—The men carrying on the campaign of wild mammal extermination were furnished with clinical thermometers and directed to take the temperature of all live ground squirrels at the time they were captured. They were also instructed to examine the animals closely for abnormal appearances or conditions and to forward all suspects to the laboratory. Unfortunately the temperature of the ground squirrel does not furnish a reliable index as to whether or not it is infected with spotted fever. It was found that a ground squirrel, after being trapped and left in the hot sunshine for awhile, might show a temperature of 110° F., which, when the animal was removed to the shade, might drop as much as 10 degrees in the course of an hour. Under these conditions the temperature of ground squirrels was found to vary from 95° F. to 110° F.

Ricketts had observed this variability in the temperature of both the healthy and infected ground squirrel, and in order to determine whether or not a ground squirrel was infected with spotted fever after it had been inoculated with the virus of that disease, he found it necessary to make an inoculation of the blood from the squirrel into a guinea pig. In the absence of either ante-mortem or post-mortem lesions or evidences characteristic of spotted fever in the ground squirrel this is apparently the only method that offers any hope of success of finding the infection among them in nature. As the ground squirrels used for this purpose have to be selected more or less at random, the work naturally will have to be taken up and done on a large scale before any definite conclusions can be arrived at. This, of course, necessitates the use of a large number of guinea pigs, which are obtained with difficulty in Montana.

It was impossible to carry the work on to any extent during the season of 1911. Blood from only 21 ground squirrels was injected into a corresponding number of guinea pigs. The ground squirrels were selected on account of their harboring a large number of ticks, or their having an extremely high or low temperature, or their showing some condition that seemed abnormal.

The quantity of ground-squirrel blood that was injected into the guinea pigs varied from 2 c. c. in some cases to 4 c. c. in others. The blood was usually taken from the heart of the ground squirrel and injected intraperitoneally with 2 c. c. of normal saline solution. The temperatures of the guinea pigs were then taken every day for about two weeks. None of the pigs injected from the 21 squirrels showed any evidences of spotted fever, although they all developed it when later they were given an immunity test with the virus of that disease. This work thus proved negative so far as finding the infection in ground squirrels is concerned.

The susceptibility of the ground squirrel to spotted-fever infection.—The ground squirrels were caught and kept in captivity until they had recovered from the injuries caused by the traps. They were then inoculated intraperitoneally with the virus of spotted fever. Their temperatures were taken each day, and at the end of definite periods inoculations of their blood were made intraperitoneally into guinea pigs. The blood for this purpose was usually taken from the heart of the squirrel by means of a syringe. Many of the squirrels died as a result of the heart puncture. No lesions characteristic of spotted fever could be found in any of them on post-mortem examination, although the injection of their blood into guinea pigs usually produced spotted fever in the pigs. The same irregularity in the temperature range of the ground squirrels was observed after they were inoculated with the virus of spotted fever, as was observed in them before they were inoculated, usually ranging from 100° F. to 104° F.

The following table shows the results of inoculating guinea pigs with blood of ground squirrels which had previously been inoculated with the virus of spotted fever:

No. of squirrel.	Amount of virus inoculated.	Duration from date of inoculation.	Blood from squirrel to pig.	No. of guinea pig.	Result in guinea pigs.
	c. c.	*Days.*	*c. c.*		
26	1.0	7	2.0	75	Positive,[1] died.
27	1.0	5	2.5	118	Do.
28	1.0	5	1.5	119	Do.[1]
29	1.0	5	1.0	120	Do.
30	1.0	5	1.0	121	Do.
31	1.0	5	1.5	122	Do.
32	1.0	5	1.0	123	Do.
33	1.0	5	1.0	124	Do.
34	1.0	5	1.0	125	Do.
35	1.0	5	1.5	126	Positive, moribund, killed.
36	1.0	5	1.0	127	Do.
37	1.0	5	1.0	128	Positive, died.
38	1.0	5	1.5	129	Do.
51	1.0	5	.5	155	Positive, moribund, killed.
52	.5	5	.5	156	Do.
53	.5	2	.5	149	Negative.[2]
54	1.0	5	.75	157	Positive, died.
55	.5	5	.75	158	Questionable.[3]
57	1.0	5	.75	159	Positive, moribund, killed.
65	.5	6	.5	299	Positive, died.
66	.5	12	.5	306	Negative.
		6	.5	300	Positive, died.
		12	.5	307	Positive, recovered.
67	.5	6	.5	301	Positive, died.
68	.5	6	.5	302	Do.
69	.5	6	.5	303	Positive, recovered.
70	.5	12	.5	308	Negative.
		5	.5	388	Positive, died.

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[1] Positive, means that the guinea pig ran the temperature and showed the lesions that are considered typical of spotted fever.

[2] Negative, means that the guinea pig did not have spotted fever as proven later when it was given the immunity test.

[3] Questionable, means that there was doubt as to whether or not the guinea pig had spotted fever.

That the blood taken from ground squirrel No. 53 on the second day after its inoculation with the virus did not infect the guinea pig, as was proven later when the guinea pig was given the immunity test, is not positive proof that the ground squirrel was immune to spotted fever. Nonimmune guinea pigs do not invariably develop the disease when they are injected with the virus, but the negative result in question is probably due to the early date in the period of incubation at which the blood was taken from the ground squirrel.

The result with ground squirrel No. 55 is in doubt, since the guinea pig did not run the temperature or show signs typical of spotted fever either following its injection with blood of the ground squirrel or later when it was given the immunity test. It is probable, however, that it had a mild attack of spotted fever and was thus rendered immune as a result of its injection with the blood of the ground squirrel.

Blood taken on the sixth day from ground squirrels Nos. 65, 66, and 69 was infective for guinea pigs, but it was not infective for them at the end of 12 days except in the case of ground squirrel No. 66. These results are in rather close accord with Ricketts's findings, namely, that the blood of ground squirrels experimentally infected with spotted fever is not usually infectious for guinea pigs after the twelfth to the fifteenth day. It will be observed that nearly all of the ground squirrels tested were definitely proven to be susceptible to experimental infection with spotted fever as shown by the results in guinea pigs. This is rather contrary to expectations, in view of the fact that all of the ground squirrels came from a district supposed to be badly infected with spotted fever, and since that animal is known to be susceptible to infection through the bite of the infected tick.

As more or less of a control for the work along this line two experiments were done with ground squirrels that had recovered from spotted fever. Ground squirrels Nos. 27 and 31 were experimentally infected with spotted fever as is shown above. About seven months after they were thus infected they were again inoculated with the virus and five days later inoculations of their blood were made into guinea pigs Nos. 384 and 385, respectively. Both of the guinea pigs remained well until they were given the immunity test a month later from which they both developed spotted fever. These results thus indicate that these two ground squirrels were immune to spotted fever after a lapse of seven months.

Further work during the next season on the immunity of ground squirrels from other infected districts is contemplated.

The protective or neutralizing properties of the blood of immune ground squirrels.—Ricketts having found that the blood of the ground squirrel recently recovered from spotted fever has rather marked neutralizing powers when mixed with the virus of that disease and injected into guinea pigs, some work was done along this line with blood from 30 ground squirrels that were caught in the infected district. The blood was defibrinated and quantities varying from 0.5 c. c. to 2 c. c. were mixed with 0.5 c. c. or 1 c. c. of virus of spotted fever. After mixing the blood and virus it was immediately injected into guinea pigs. A total of 35 guinea pigs were thus utilized, 2 of them being used in each case of 5 ground squirrels. The results will not be given in tabular form, as the blood from the ground squirrels did not apparently protect any of the guinea pigs in the least against infection with spotted fever. Of the 35 guinea pigs thus utilized 27 died of spotted fever, while the remainder had well-marked cases of that disease but recovered.

In connection with this work some experiments were done with the blood of three ground squirrels which, 100 days previously, had been immunized against spotted fever; that is, their infection with that disease was proven. They were ground squirrels Nos. 34, 37, and 38 (see p. 741).

The following table will show the results of mixing the blood of the ground squirrels with the virus of spotted fever and injecting the mixture into guinea pigs:

No. of squirrel.	Quantities mixed.		Injected into pig No.—	Result in guinea pig.
	Squirrel blood.	Virus.		
	c. c.	*c. c.*		
34	0.5	0.5	258	Pig protected; immunity test, pig died of spotted fever.
	1.0	.5	259	Do.
37	.5	.5	260	Pig died of spotted fever.
	1.0	.5	261	Pig had medium case of spotted fever; recovered.
38	.5	.5	262	Pig had mild case of spotted fever; immunity test, negative.
	1.0	.5	263	About same as pig 262.
Control..	2.0	.5	264	Pig died of spotted fever.

These experiments simply show that the blood of the ground squirrel recently recovered from spotted fever has some power for neutralizing the virus of that disease when the two are mixed together, and that it remains, partly at least, in the blood of the ground squirrel for a few months. They also show that this neutralizing or protective power varies in different ground squirrels.

One conclusion, however, which may be drawn from the preceding work on the immunity and susceptibility of the ground squirrel to spotted fever is that the best method of searching for immune ground squirrels in nature is by inoculating them with the virus of that disease and subsequently making inoculations of their blood into guinea pigs.

THE BADGER (TAXIDEA TAXUS).

The susceptibility of the badger to spotted fever infection by inoculation was tried in a few cases. This animal is not found abundantly in the Bitter Root Valley, and during the season only four of them were obtained alive. They were inoculated intraperitoneally with virus obtained from the guinea pig. Before the badgers were inoculated their temperatures were taken on several successive days in order to determine the normal temperature of the badger. It was found to vary considerably from day to day, as much as from 98° F. to 102.6° F., the normal apparently being about 100° F. to 101° F. After the badgers were inoculated with the virus their temperatures were taken daily and at the end of certain intervals blood was withdrawn from their hearts by means of a syringe and injected into guinea pigs. As a result of injecting the badger with the virus of spotted fever the temperature range of that animal did not seem to vary from the normal, and consequently its temperature, like that of the ground squirrel, apparently does not furnish a reliable index as to whether or not the animal is infected.

The results of inoculating badgers with the virus of spotted fever and the subsequent injection of their blood into guinea pigs are shown in the following table:

No. of badger.	Quantity of virus injected.	Duration from date of inoculation.	No. of guinea pig.	Quantity of blood.	Result in guinea pig.
	c. c.	*Days.*		*c. c.*	
1.......	7	7	71	2.0	Negative.[1]
			72	3.0	Do.
2.......	10	5	130	1.0	Do.
			131	0.75	Do.
		8	145	0.75	Do.
		10	152	1.0	Do.
3.......	6	5	132	1.5	Do.
			133	1.0	Do.
		8	146	0.5	Do.
			147	1.5	Positive.[2]
		12	162	0.75	Negative.
4.......	2	4	163	1.0	Do.
		7	167	0.5	Do.

[1] Negative means that the pig did not develop spotted fever.
[2] Positive means that the pig developed spotted fever.

It will be observed that of the thirteen guinea pigs which were inoculated with blood from the badgers only one of them (No. 147) developed spotted fever. This guinea pig died of spotted fever, the diagnosis of which was confirmed by injecting 0.5 c. c. of its blood into a fresh guinea pig which also developed the disease, but recovered. The negative results with the other 12 guinea pigs were later verified, except in the case of guinea pig No. 145, which died of pneumonia on the 15th day, by giving them the immunity test with the virus from which they all developed typical cases of spotted fever. It is worthy of note that although guinea pig No. 146 was injected with 0.5 c. c. of blood from badger No. 3 at the same time that guinea pig No. 147 was injected with 1.5 c. c. of blood from the same badger, it did not develop spotted fever. It is possible, however, that the blood of a larger percentage of the badgers would have been found infective for guinea pigs if the inoculation of guinea pigs had been done oftener or if a larger quantity of blood had been given them than was the case in the above experiments.

Prior to inoculating the badgers with the virus of spotted fever, some blood was withdrawn from their hearts in order to test its immunizing power for the virus of that disease. This was done by mixing definite quantities of the blood, 1 to 2 c. c., with the virus, usually 0.5 c. c., and then injecting it into guinea pigs. This experiment was repeated with the blood of badger No. 3 about one month after the badger had been injected with the virus. This was done in view of the fact that guinea pig No. 147 had been infected with spotted fever from this badger. In no case, however, did the badger blood that was mixed with the virus appear to give the guinea pigs any protection, as they all developed spotted fever of about the same severity as did the controls which were guinea pigs that were given nothing but the virus.

Although the above results with badger No. 3 undoubtedly show that the badger may possibly be experimentally infected with spotted fever, the infection is apparently so slight and infrequent as to practically eliminate that animal from the probability of playing any part in keeping the infection alive or of spreading the disease in nature.

As the badgers used in these experiments came from the Bitter Root Valley, it can not be positively stated that they had not previously had spotted fever, by which they were rendered immune to further infection with the disease. This, however, is thought highly improbable, as the tick, *Dermacentor andersoni* Stiles, has never been observed feeding on the badger.

THE COYOTE (CANIS LESTES).

Five coyotes that had been captured in the valley during the previous winter were obtained for experimental purposes. Their susceptibility to experimental infection with spotted fever was tested in the usual way by intraperitoneal injections of the virus and subsequent inoculations of their blood into guinea pigs.

The blood of the coyote is rather toxic for guinea pigs, and usually some of them die of peritonitis, pericarditis, etc., following their injection with blood of the coyote.

The temperature of the coyote was found to be quite variable from day to day, the normal being about 101° F. to 102° F., although, without apparent cause, it sometimes ranged from 98° F. to 103.5° F. It was not found, however, that inoculating the animals with the virus of spotted fever influenced in any way the range of temperature.

The following table shows the results of inoculating the coyotes with the virus of spotted fever and the subsequent injection of their blood into guinea pigs:

No. of coyote.	Quantity of virus injected.	Duration from date of inoculation.	No. of guinea pig.	Quantity of blood injected.	Result in guinea pig.
	c. c.	*Days.*		*c. c.*	
1	5	7	73	3.0	Died second day, peritonitis.
			74	2.0	Died sixth day, peritonitis.
		9	111	1.0	Died fifteenth day, pericarditis and peritonitis.
			112	2.0	Negative.[1]
2	10	5	134	2.0	Do.
			135	1.0	Do.
		8	142	1.0	Do.
		12	160	.75	Do.
3	5	6	136	2.0	Do.
			137	1.0	Do.
		9	143	1.5	Died second day, peritonitis.
			144	.5	Died third day, peritonitis.
		13	161	....	Negative.
4	3	5	380	.25	Do.
			381	.75	Do.
5	2	5	182	.25	Do.
			183	.75	Do.

[1] Negative means that the pig did not develop spotted fever as a result of its injection with coyote blood, but did develop it when, about a month later, it was given the immunity test.

The above tests did not show the coyote to be susceptible to infection with spotted fever. While it could not be proven that these coyotes had not previously had spotted fever, it is not likely that they had, as they were caught during the winter when they were yet very small.

THE DOMESTIC CAT (FELIS DOMESTICUS).

The susceptibility of the cat was tried in four cases. As the cats that were used all came from the District of Columbia they undoubtedly had never been exposed to spotted fever infection. They were inoculated intraperitoneally with virus and after definite periods of incubation, inoculations of their blood were made into guinea pigs. The temperature of the cats, which was taken daily for 14 days after they were inoculated, was found to range from 100 F. to 102.6 F. The cats showed no evidences of being sick at any time during the experiments. The blood of the cat was found to be more or less toxic for guinea pigs, and consequently several of the guinea pigs died in from two days to two or three weeks after they were inoculated. Their temperature curves were not at all characteristic of spotted fever and the necropsies usually showed the presence of peritonitis, pneumonia, pericarditis, or a similar condition, but no lesions of spotted fever. Further injection of their blood into fresh guinea pigs usually killed within two or three days.

The results of the experiments are shown in the following table:

No. of cat.	Quantity of virus injected.	Duration from date of inoculation.	No. of pig.	Quantity of blood injected.	Result in guinea pigs.
	c. c.	*Days.*		*c. c.*	
1	1	5	349	0.5	Died of pneumonia on third day.
		5	350	.5	Died fifteenth day; leisons of peritonitis; none of spotted fever.
		8	367	.5	Died sixth day, of fibrinous pneumonia.
2	2	5	351	.75	Died twenty-third day; pneumonia and pericarditis; no lesions of spotted fever.
		5	352	.25	Negative; immunity test positive; recovered.
		8	368	.5	Do.
3	2	5	353	.5	Do.
		5	354	.5	Negative; immunity test positive; died.
		8	369	.5	Do.
4	3	5	355	.5	Died fifth day of pneumonia.
		5	356	.5	Died sixteenth day, peritonitis; no lesions of spotted fever.
		8	370	.5	Died second day, peritonitis.

These experiments do not show the cat to be susceptible to infection with spotted fever, neither do they prove that it is impossible to infect the cat although it is very probable that if it can be done at all it will be only in a small percentage of cases. It is, therefore, very unlikely that the cat is in any way instrumental in spreading spotted fever except that it may possibly act as an agent for carrying ticks into dwelling houses.

THE WEASEL (PUTORIUS ARIZONENSIS).

Only two weasels that were in a physical condition suitable for experimental purposes were obtained. They were both trapped in the infected district. Their susceptibility to spotted fever infection was tested in the usual way.

Weasel No. 1 was inoculated intraperitoneally with 1 c. c. of virus at which time the temperature of the animal was 101.4 F. while on successive days it was 104, 103, and 98.6 F. The animal was found dead on the fifth day following its inoculation and 0.5 c. c. of its blood was then given to guinea pig No. 70. This guinea pig died of spotted fever within 12 days. Two days before this guinea pig died 0.5 c. c. of its blood was given to guinea pig No. 148 which also developed a typical case of spotted fever but recovered.

Weasel No. 2 was inoculated intraperitoneally with 0.75 c. c. of virus, and on successive days its temperature was 104.2, 105.7, 104, and 104.3 F. On the fourth day after the weasel was inoculated 0.5 c. c. of its blood was given to guinea pig No. 168. This guinea pig, unfortunately, died of peritonitis on the fifth day following its injection. It was therefore impossible to say whether or not this guinea-pig was infected with spotted fever. The inoculation of its blood into a fresh guinea pig would also no doubt have caused its death. Ten days after the weasel was inoculated with the virus 0.75 c. c. and 1 c. c. of blood were withdrawn from the animal's heart and injected into guinea pigs Nos. 170 and 171, respectively. The weasel died from the operation. Neither of the guinea pigs ran the temperature or otherwise presented any symptoms of spotted fever in the guinea pig. Guinea pig No. 170 became very much emaciated and died four weeks after it was injected and before it was given the immunity test. Guinea pig No. 171 was given the immunity test from which it developed spotted fever and died.

It will thus be seen that the blood of weasel No. 1 was ineffective for a guinea pig on the fifth day of the weasel's inoculation, while the results with weasel No. 2 were negative in so far as the experiment was carried, but were not conclusive.

At necropsy there were no lesions of spotted fever apparent in either one of the weasels.

From the above it is evident that the weasel is susceptible to experimental infection with spotted fever. Further work, however, will be done along this line next year.

THE TREATMENT OF SPOTTED FEVER IN ANIMALS.

From the view point of the inhabitants of the Bitter Root Valley the treatment of spotted fever ranks in importance second only to the eradication of the disease. Their desire is for a remedy with which human cases of the disease may be successfully treated. This, of course, is quite natural, particularly when the high mortality rate of the disease there is taken into consideration.

Ricketts and his associates did considerable work trying to produce, from the horse, a curative serum for the disease. They obtained a serum that undoubtedly had some protective powers, and although it was given only a limited trial in the treatment of human cases of spotted fever, the results obtained were not encouraging as to its efficiency in the treatment of the disease.

Since Ricketts's death Heinemann and Moore[1] have continued the work and have been able to produce a serum that has a high protective power for guinea pigs. It has been used in the treatment of human cases of spotted fever, but not yet to an extent to justify any deductions as to its value in the treatment of the disease. It probably exerts a beneficial effect at least when given early in the disease.

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[1] Heinemann, P. G., and Moore, J. J., Jour. Am. Med. Assn., Chicago, 1911, Vol. LVII, p. 198.

Dr. Karl Kellogg, of Stevensville, Mont., used sodium cacodylate, apparently with good results, in the treatment of two cases of spotted fever during the summer of 1911. One of the cases, however, was treated with serum before the treatment with sodium cocodylate was begun.

Encouraged by Kellogg's results, and considering that there are some indications pointing to the infection of spotted fever being protozoal in character, the treatment of spotted fever in guinea pigs and rhesus monkeys with certain drug preparations, particularly the arsenic compounds, was taken up at the Hygienic Laboratory. The drugs used were salvarsan (606), sodium cacodylate, and urotropin. The animals were inoculated with the virus of spotted fever, blood from a monkey sick with that disease being used for the purpose. Blood of the monkey was used because it was feared that the blood of the guinea pig might be more or less toxic for monkeys. The blood was aseptically withdrawn from the monkey's heart and defibrinated. In order to test the prophylactic powers of the drugs, the treatment of some of the animals was begun at the time they were given the virus and before the symptoms of the disease appeared. Usually, however, the treatment was begun when the temperature of the animal began to rise, about the third day following inoculation. The treatment was administered to the monkeys intravenously, through the vein of the hind leg, and to the guinea pig intramuscularly and intravenously. The monkeys were injected intraperitoneally with 1.5 c. c. of virus and 2 c. c. of normal saline solution. The results with the different drugs used are given below.

THE TREATMENT OF MONKEYS WITH SALVARSAN.

Monkey No. 4.

On September 28, immediately after injecting the virus, the animal was given intravenously 0.1 gram of salvarsan in a 0.5 per cent solution. The salvarsan was given at this time in order to test its prophylactic powers. The temperature of the animal at 10 a. m. on the days following was: 104, 102.6, 103.6, 105.5, 105.1, 105, 104, 102.7° F. and death. The animal died on the tenth day, the necropsy showing typical lesions of spotted fever. There was marked redness of the face, buttocks, and extremities, and much hemorrhage under the skin over the entire body. The lymph glands in the groin, and the spleen, were typical of spotted fever.

Monkey No. 5.

The results of temperature, treatment, etc., are as follows:

September 28, monkey inoculated with virus.
September 29, 10 a. m., temperature 103.5° F.
September 30, 10 a. m., temperature 103.6° F.
October 1, 9.50 a. m., temperature 103° F.

Given intravenously 15 c.c. of a 0.5 per cent solution of salvarsan = 0.075 gram.

October 2, 10 a. m., temperature 103° F.
October 3, 10 a. m., temperature 103.6° F.

The dose of salvarsan as given October 1 was repeated.

October 4, 10 a. m., temperature 102.9° F.
October 5, 10 a. m., temperature 103.4° F.
October 6, 10 a. m., temperature 104.8° F.
October 7, 10 a. m., temperature 105.2° F.

Animal given 12 c. c. of 0.5 per cent solution of salvarsan = 0.06 gram.

October 8, 10 a. m., temperature 104.3° F.
October 9, 10 a. m., temperature 104.2° F.
October 10, 10 a. m., temperature 103.3° F.
October 11, 10 a. m., temperature 102.4° F.

The temperature continued at normal and the monkey recovered.

Monkey No. 6.

September 28, monkey inoculated with virus.
September 29, 10 a. m., temperature 102° F.
September 30, 10 a. m., temperature 103° F.
October 1, 10 a. m., temperature 103.2° F.

Given intravenously 20 c. c. of 0.5 per cent solution of salvarsan = 0.1 gram.

October 2, 10 a. m., temperature 102.2° F.
October 3, 10 a. m., temperature 103.6° F.

Given intravenously 22 c. c. of a 0.5 per cent solution of salvarsan = 0.11 gram.

October 4, 10 a. m., temperature 103.4° F.
October 5, 10 a. m., temperature 102.8° F.
October 6, 10 a. m., temperature 102.3° F.

On October 30 the monkey was given an immunity test with 1.5 c. c. of virus from which there was no reaction, the temperature being taken for 10 days.

Monkey No. 11.

October 14, monkey inoculated with virus.
October 15, 9.30 a. m., temperature 103.1° F.
October 16, 10 a. m., temperature 104.2° F.
October 17, 10 a. m., temperature 104.9° F.

From the monkey 0.5 c. c. of blood was taken and given to guinea pig No. 238, which developed spotted fever and died.

The monkey was given, intravenously, 12 c. c. of a 0.5 per cent solution of salvarsan = 0.06 gram.

October 18, 10 a. m., temperature 105° F.

The dose of salvarsan as given on the 17th was repeated.

October 19, 10 a. m., temperature 105.1° F.

The animal was given, intravenously, 6 c. c. of a 0.5 per cent solution of salvarsan = 0.03 gram.

October 20, 10 a. m., temperature 105.1° F.
October 21, 10 a. m., temperature 105.1° F.
October 22, monkey was found dead.

The necropsy showed the usual typical lesions of spotted fever.

The monkey died at 10.30 p. m.

The animal looked sick during the experiment, but there were no skin lesions of spotted fever apparent. At necropsy the animal was found to have a well-developed case of tuberculosis. The axillary glands were caseous and the liver, spleen, pancreas, and kidneys the seat of miliary caseous abscesses. The inguinal glands were enlarged but not caseous. It is therefore impossible to say what part spotted fever played in causing the death of this monkey. An inoculation of a guinea pig was not made from the monkey.

Monkey No. 12.

October 14, the monkey was inoculated with virus.
October 15, 9.30 a. m., temperature 102.9° F.
October 16, 10 a. m., temperature 103° F.
October 17, 10 a. m., temperature 104.2° F.

From the animal 0.5 c. c. of blood was taken and given to guinea pig No. 239, which developed spotted fever and recovered.

The monkey was given intravenously 15 c. c. of a 0.5 per cent solution of salvarsan = 0.075 gram.

October 18, 10 a. m., temperature 104.8° F.
October 19, 10 a. m., temperature 104.7° F.

The dose of salvarsan as given on October 17 was repeated.

October 20, 10 a. m., temperature 103.4° F.
October 21, animal found dead.

The necropsy showed the lesions typical of spotted fever and pig No. 249, which was inoculated with blood from the monkey, died of spotted fever.

Monkey No. 13.

October 14, monkey inoculated with virus.
October 15, 9.30 a. m., temperature 102.2° F.
October 16, 10 a. m., temperature 103.1° F.
October 17, 10 a. m., temperature 104.9° F.

0.5 c. c. of blood from monkey was given to pig No. 240, which developed spotted fever (recovery).

Monkey was given 18 c. c. of a 0.5 per cent solution of salvarsan = 0.09 gram.

October 18, 10 a. m., temperature 104.4° F.
October 19, 10 a. m., temperature 104.9° F.

Monkey was given 15 c. c. of a 0.5 per cent solution of salvarsan = 0.075 gram.

October 20, 10 a. m., temperature 104.7° F.
October 21, animal found dead.

The necropsy showed the lesions typical of spotted fever, and pig No. 250, which was given 0.5 c. c. of blood from the monkey, developed spotted fever (recovery).

Control monkey No. 10.

This monkey was used as a control for monkeys Nos. 4, 5, and 6. They were all inoculated with virus in the same manner and at the same time on September 28. The control monkey was given no treatment.

Its temperature at 10 a. m. on September 29 and the days following was 102.8°, 102.8°, 102.6°, 105°, 104.9°, 105.5°, 105.7°, 104.6°, and death.

The necropsy showed the usual typical lesions of spotted fever.

Control monkey No. 16.

This monkey was used as a control for monkeys Nos. 11, 12, and 13, they all being inoculated with the virus on the same date and under the same conditions on October 14.

The temperature of this monkey at 10 a. m. on the day it was inoculated was 103.8° F., and on the following days it was 102.9°, 103.6°, 104.1°, 106°, 105°, 105.4°, 105°, and death.

This monkey ran a typical course of spotted fever and at necropsy showed the usual lesions of that disease.

THE TREATMENT OF GUINEA PIGS WITH SALVARSAN.

Guinea pigs were inoculated intraperitoneally with the virus of spotted fever and treated with a 0.5 per cent solution of salvarsan administered to them in different ways.

Guinea pigs Nos. 197 and 198 were given, intramuscularly in the left thigh, 0.025 and 0.03 gram, respectively, at the time they were inoculated with the virus. Both of these pigs ran marked courses of spotted fever with scrotal sloughing, but both of them recovered.

Guinea pigs Nos. 199, 200, and 201 were inoculated with the virus; and then three days later, when the temperature began to rise, they were given, intramuscularly in the left thigh, 0.025, 0.03, and 0.035 gram, respectively. These pigs died in 8, 5, and 7 days, respectively, with the symptoms and lesions of spotted fever.

As controls for the above, guinea pigs Nos. 207 and 208 were used, they simply being inoculated with the virus, but not treated in any way. They both died of spotted fever on the eighteenth and twelfth days, respectively.

Guinea pigs Nos. 221, 222, and 223, three days after they were inoculated with the virus, were injected through the jugular vein with 0.01, 0.015, and 0.015 gram, respectively. They died of spotted fever on the seventh, ninth, and eighth days, respectively.

Guinea pig No. 228 was used as a control for pigs Nos. 221, 222, and 223. It died of spotted fever on the tenth day following its inoculation with the virus of that disease.

THE TREATMENT OF MONKEYS WITH SODIUM CACODYLATE.

Monkey No. 7.

Immediately after inoculating the monkey with the virus of spotted fever on September 28 it was given, intravenously through a vein on the back of the hind leg, 6 c. c. of a 1 per cent solution of sodium cacodylate = 0.06 gram. The temperature of the monkey at 10 a. m. on the successive days was: 102.4°, 102.9°, 102.8°, 103.2°, 105.1°, 105.5°, 105.3°, 105.3°, 104.8°, 103.4°, and death. At necropsy the animal showed the usual typical lesions of spotted fever.

Monkey No. 8.

September 28, the monkey was inoculated with virus.
September 29, 10 a. m., temperature 101.8° F.
September 30, 10 a. m., temperature 103.1° F.
October 1, 10 a. m., temperature 103. 6° F.

Monkey was given, intravenously, 4 c. c. of a 1 per cent solution of sodium cacodylate = 0.04 gram.

October 2, 10 a. m., temperature 105.4° F.
October 3, 10 a. m., temperature 105.7° F.

Given, intravenously, 5 c. c. of a 1 per cent solution of sodium cacodylate = 0.05 gram.

October 4, 10 a. m., temperature 106.3° F.
October 5, 10 a. m., temperature 105.5° F.
October 6, 10 a. m., temperature 102.1° F.

Monkey was found dead in the cage at 2 p. m. The necropsy showed the lesions that are considered typical of spotted fever in the monkey.

Monkey No. 9.

September 28, the monkey was inoculated with virus.
September 29, 10 a. m., temperature 102.4° F.
September 30, 10 a. m., temperature 103.2° F.
October 1, 10 a. m., temperature 104° F.

Monkey was given, intravenously, 6 c. c. of a 1 per cent solution of sodium cacodylate = 0.06 gram.

October 2, 10 a. m., temperature 104.6° F.
October 3, 10 a. m., temperature 106° F.

Given, intravenously, 8 c. c. of a 1 per cent solution of sodium cacodylate = 0.08 gram.

October 4, 10 a. m., temperature 105.4° F.
October 5, 10 a. m., temperature 105.5° F.
October 6, 10 a. m., temperature 104.6° F.

The dose of sodium cacodylate as given on October 3 was repeated. October 7 the monkey was found dead in the cage and the necropsy showed the lesions characteristic of spotted fever in the monkey.

Monkey No. 10 was used as a control for monkeys Nos. 7, 8, and 9, all having been inoculated with the virus of spotted fever at the same time on September 28. For result with monkey No. 10, see page 750.

THE TREATMENT OF GUINEA PIGS WITH SODIUM CACODYLATE.

Guinea pigs were inoculated with the virus of spotted fever and treated with sodium cacodylate, using for the purpose a 1 per cent solution of the drug.

Guinea pigs, Nos. 202 and 203, immediately after they were given the virus, were injected in the muscles of the left thigh with 0.015 and 0.02 gram, respectively. Pig No. 202 ran a typical and severe course of spotted fever with sloughing of the scrotum and peeling of the ears, but recovered, while pig No. 203 died of spotted fever on the sixteenth day.

Guinea pigs, Nos. 204, 205, and 206, on the third day after they were inoculated with the virus, were injected subcutaneously with 0.015, 0.02 and 0.025 gram, respectively, and on the fifth day the dose in the case of each guinea pig was repeated. Guinea pigs Nos. 204 and 205 died of spotted fever on the tenth and ninth days, respectively, while pig No. 206 recovered after running a well-marked case of spotted fever.

Guinea pigs Nos. 207 and 208 were used as controls for the pigs treated with sodium cacodylate, the pigs all having been inoculated with the virus of spotted fever at the same time. For results with guinea pigs Nos. 207 and 208 see page 751.

THE TREATMENT OF MONKEYS WITH UROTROPIN (HEXAMETHYLENAMINE).

Two monkeys were treated with intravenous injections of urotropin. The drug being very soluble in water, a 25 per cent solution was made and then filtered through a Berkefeld filter before it was injected into the monkeys. By filtering the aqueous solution, a sterile preparation was obtained with which there was no danger of infecting the monkeys.

Monkey No. 14.

On October 14, the monkey was inoculated with the virus of spotted fever and immediately thereafter it was injected intravenously with 8 c. c. of a 25 per cent solution of urotropin = 2 grams. The monkey was given this same size dose of urotropin each day until October 22, on which date the animal was found dead in the cage. The temperature of the monkey on the days following its inoculation with virus was: 103.3°, 102.3°, 102.7°, 105.6°, 105°, 104.8°, and 104.8° F.

Three days after the monkey was inoculated with the virus, 0.5 c. c. of its blood was given to guinea pig No. 241 which developed spotted fever and recovered. The necropsy of the monkey showed the usual lesions of spotted fever.

Monkey No. 15.

October 14 the monkey was inoculated with virus.
October 15, 10 a. m., temperature 102.5° F.
October 16, 10 a. m., temperature 103.2° F.
October 17, 10 a. m., temperature 105.3° F.

0.5 c. c. of blood from the monkey was given to guinea pig No. 242, which developed spotted fever and recovered.

The monkey was injected intravenously with 12 c. c. of a 25 per cent solution of urotropin = 3 grams.

October 18, 10 a. m., temperature 105.6° F.

The dose of urotropin as given on October 17 was repeated.

October 19, 10 a. m., temperature 104.7° F.
October 20, 10 a. m., temperature 104.6° F.

The dose of urotropin as given on October 18 was repeated.

October 21, 10 a. m., temperature 105.3° F.

The dose of urotropin as given on October 20 was repeated.

October 22 the animal was found dead. The necropsy showed the lesions that are typical of spotted fever in the monkey.

As a control for monkeys Nos. 14 and 15, monkey No. 16 was used, see page 751.

THE TREATMENT OF GUINEA PIGS WITH UROTROPIN.

Only two guinea pigs, Nos. 224 and 225, were treated with urotropin. Beginning on the third day after the guinea pigs were inoculated with the virus, they were treated on successive days with subcutaneous injections of urotropin as follows: Guinea pig No. 224 was given 1.5 grams, 0.75 gram, 1 gram, and 1 gram, while guinea pig No. 225 was given 2 grams, 0.75 gram, 1 gram, and 1 gram. Both pigs died of spotted fever on the ninth day after they were inoculated with the virus of that disease. As a control, guinea pig No. 228 was used (see p. 751).

The following table will show the results of the treatment of the monkeys with salvarsan, sodium cacodylate, and urotropin:

No. of monkey.	Treated with—	Result.
1	Not treated	Died on eighth day.
2	.....do	Died on ninth day.
3	.....do	Do.
4	Salvarsan	Died on tenth day.
5	.....do	Recovered.
6	.....do	Died on eighth day.[1]
7	Sodium cacodylate	Died on tenth day.
8	.....do	Died on eighth day.
9	.....do	Died on ninth day.
10	Control for Nos. 4 to 9	Do.
11	Salvarsan	Died on eighth day.
12	.....do	Died on seventh day.
13	.....do	Do.
14	Urotropin	Died on eighth day.
15	.....do	Do.
16	Control for Nos. 11 to 15	Do.

[1] This monkey was found at necropsy to have a well-advanced case of tuberculosis.

It will readily be observed that the results obtained above in the treatment of spotted fever in monkeys and guinea pigs with the different drug preparations that were tried are by no means encouraging in so far as the successful treatment of that disease is concerned. In fact, the administration of the drugs seems, on the whole, as compared with the controls which received no drug treatment at all after being inoculated with the virus of spotted fever, to have hastened the death of most of the animals that were treated. Of the 10 monkeys that were treated, only 1 recovered. That one was treated with intravenous injections of salvarsan. The chances of finding a specific remedy for the treatment of spotted fever seem rather remote. Possibly, if the specific organism of that disease can be identified and isolated, a remedy for the disease may be procured. However, in this connection it must be borne in mind that there are already quite a number of diseases, the causative organisms of which are well known, but for which no specific remedies have yet been prepared.

SUMMARY AND REMARKS.

In the work on Rocky Mountain spotted fever which was begun on May 26, 1911, an infected district of about 8 square miles was selected, on which a concrete dipping vat was constructed, the dipping of domestic stock was begun, and considerable headway was made in destroying the wild mammals in the infected district that was selected for demonstrative purposes. The number of small wild mammals killed, by shooting and trapping, and collected was 3,465, of which

3,233 were ground squirrels. This does not include the number killed with poison or carbon bisulphide.

A search was made for the infection of spotted fever among the ground squirrels in nature, the results of which were negative.

The susceptibility to experimental infection with spotted fever was studied in the cases of 25 ground squirrels caught at random in the infected district. They were inoculated with the virus of spotted fever and subsequent inoculations of their blood made into guinea pigs. As shown by the results in the guinea pigs, 23 of the ground squirrels were positively infected with spotted fever, one of them was probably infected, while the results with 1 squirrel, the blood of which was injected into a guinea pig on the second day following its inoculation, was negative. In all probability this negative result was due to the early date in the period of incubation at which the blood was transferred from the ground squirrel to the guinea pig.

There is, therefore, no positive evidence that any of the 25 ground squirrels were immune to spotted fever. As these ground squirrels all came from an infected territory and assuming that one attack of spotted fever in the ground squirrel renders that animal immune to further infection with that disease these results tend to minimize the probability of the ground squirrel actually playing a part in the spread of spotted fever. Further work with ground squirrels from other infected territories will be done in order to determine whether or not immune ground squirrels can be found existing in nature.

Out of a total of 4 badgers that were experimented with only one of them was found susceptible to infection with spotted fever, and of 5 guinea pigs that were inoculated with blood taken from this badger at three different times only one of them developed spotted fever. Provided that none of these badgers had an acquired immunity at the time they were experimented with, and it does not seem likely that they did, the badger is evidently only very slightly susceptible to experimental infection with spotted fever and very probably plays no part in the spread of the disease.

The results with experiments of infecting 5 coyotes and 4 domestic cats were negative. It is not thought that either one of these animals has any thing to do with the spread of spotted fever except that the cat may possibly carry infected ticks into dwelling houses.

Only two weasels were experimented with, one of which was experimentally infected with spotted fever while the results obtained in the case of the other were negative but not conclusive. Although the weasel was found to be susceptible to infection, further work along this line will be done this year.

Rhesus monkeys and guinea pigs were infected with spotted fever and treated with different drug preparations, namely, salvarsan, sodium cacodylate, and urotropin. The results obtained, however, do not indicate that any of these drugs possess any value whatever either as a prophylactic or in the treatment of spotted fever, but on the contrary their administration seems on the whole rather to intensify the severity of the disease in the animals as compared with the course of the disease in the controls.

The work on spotted fever will be again taken up early in the season of 1912 when the tick and the ground squirrel first make their appearance, it having been begun too late in 1911 to accomplish a great deal. The work will be continued on the same lines along which it was carried on in 1911. The dipping of domestic stock and the destruction of wild mammals in the selected district will be thoroughly carried out in order to determine the result that these measures may have in eradicating the tick from the district. There is no doubt that the domestic animals are a source of food for a great many adult ticks. However, the hope of completely eradicating them by dipping the domestic stock is rather discouraged by information obtained from reliable inhabitants to the effect that although the number of domestic animals has been greatly reduced in certain localities during past years the number of ticks has by no means been proportionately reduced.

Furthermore, the tick is found rather abundantly in places in the mountains at high altitudes and in localities that are practically never frequented by domestic stock. That the tick can be practically eradicated from the infected districts or even from the whole valley there is no doubt, but it will entail considerable cost and labor to do so. In this connection it may be remarked that the statement by Hunter and Bishopp[1] to the effect that the practical eradication of the spotted-fever tick from the Bitter Root Valley can be accomplished in three seasons for the approximate sum of $23,692, and that after that time the prevention of reinfestation of the valley can be easily accomplished by employing an inspector for six months' service each year is somewhat more optimistic than the facts would seem to warrant.

The dipping of domestic stock, the destruction of wild mammals, and the clearing and burning over of land are all excellent methods for eradicating the tick. The exact extent to which the dipping of domestic stock alone will eradicate the tick is as yet more or less problematical but as soon as the efficiency of the different methods, either singly or together, can be demonstrated to the ranch owners and inhabitants they will no doubt give their hearty cooperation and utmost assistance in carrying on the work and furthering its success.

There is urgent necessity for a State law under which the dipping of stock in infected districts can be enforced. It should require the dipping of all stock in territories declared by the State board of health or its secretary to be infected. Experience has shown that most of the stock owners want their stock dipped, but some of them insist on waiting until it suits their own convenience to have it done, while a small percentage of them object, for one reason or another, to having anything done. They thus handicap the work and this should not be permitted in a condition as serious as spotted fever, and where most of the stock owners are anxious to cooperate in stamping out the disease.

A State law should also be passed requiring property owners to make a reasonable effort to exterminate the rodents on their property.

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UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

NEW YORK, N. Y.

VENEREAL DISEASES—NOTIFICATION, DIAGNOSIS, AND TREATMENT.

Whereas the venereal diseases are infectious, communicable, and preventable, and constitute a serious menace to the public health, thus properly coming under the charge of the public health authorities, and

Whereas it is well established that no administrative control of such diseases is possible without a system of notification and registration, associated with provision for the municipal care of patients unable or unwilling to place themselves under proper medical care and to take the precautions necessary to prevent the infection of others: Be it therefore

Resolved, First, that on and after May 1, 1912, the superintendent or other officers in charge of all public institutions, such as hospitals, dispensaries, clinics, homes, asylums, charitable and correctional institutions, including all institutions which are supported in whole or in part by voluntary contributions, be required to report promptly the name, sex, age, nationality, race, marital state, and address of every patient under observation suffering from syphilis, in every stage, chancroid, or gonorrheal infection of every kind (including gonorrheal arthritis), stating the name, character, stage, and duration of the infection, the date and source of contraction of the infection, if obtainable, and

Second, that all physicians be requested to furnish similar information concerning private patients under their care, excepting that the name and address of the patient need not be reported.

Third, that all information and all reports in connection with persons suffering from these diseases shall be regarded as absolutely confidential and shall not be accessible by the public, nor shall such records be deemed public records.

Fourth, that the department of health shall provide facilities for the free bacteriological examination of discharges for the diagnosis of gonorrheal infections, and also shall provide, without charge, vaccines for the treatment of such infections, and

Fifth, that the department of health shall undertake to make, without charge, the Wasserman and the Noguchi tests for the diagnosis of syphilis and examine specimens for spirochetes.

Sixth, that these diagnostic and therapeutic facilities be extended only when the data required for the registration of the case be furnished by the physician treating the patient, and

Seventh, that the department provide and distribute circulars of information in relation to these diseases.

[Resolution, board of health, adopted Feb. 20, 1912.]

SAN FRANCISCO, CAL.

VENEREAL DISEASES—MUNICIPAL CLINIC FOR TREATMENT AND SUPERVISION OF.

Preamble.

In an effort to prevent the promiscuous dissemination of infection through the medium of venereal diseases, which class of diseases are included under the heading of "Communicable diseases," to minimize as far as it may be possible the dangers arising from these loathsome maladies, and to that end to exercise an intelligent and systematic medical supervision over that class of individuals, who, through the nature of their habits, render possible the spread of this class of diseases, the board of health hereby enacts the following regulations with reference thereto.

Limits and boundaries.

Section 1. Paragraph 1. The class of individuals referred to in the foregoing preamble shall confine themselves to the following-named limits and boundaries, to wit: Commercial Street from the westerly line of Kearny Street to the easterly line of Grant Avenue; Jackson Street from the westerly line of Kearny Street to the easterly line of Grant Avenue; Pacific Street from the easterly line of Montgomery Street to the westerly line of Front Street; Bartlett Alley (now Beckett) from the north side of Jackson Street between Kearny and Grant Avenue north to Pacific Street; Washington Place (now Wentworth Place) from north side of Washington Street between Kearny and Grant Avenue north to Jackson Street.

Establishment of clinics.

Sec. 2. Par. 1. There shall be established at appropriate locations (hereafter to be selected as circumstances may require) clinics for the reception and proper medical examination of all such individuals heretofore mentioned, all of said clinics to be under the control of a board of supervision, appointed by the president of the board of health, said board to consist of a chief clinician, who shall be a reputable duly registered physician, and a superintendent, who shall have complete control of the operation of said clinic or clinics, subject only to such regulations as may be put into effect by the board of health or such advisory committee or commission as may hereafter be appointed for the purpose of carrying out the object of these regulations.

Par. 2. Said chief clinician and superintendent shall be appointed by the board of health upon the nomination of such advisory committee or commission as aforesaid, and all employees of said clinic or clinics shall be appointed by the board of supervision as mentioned in paragraph 1 of this section, subject to confirmation by the president of the board of health.

Par. 3. All officers and employees of said clinic or clinics shall receive such compensation as may be hereafter determined upon and such compensation shall be in full for all services.

Sec. 3. Par. 1. All orders covering the working of the clinic shall be signed by the chief clinician and superintendent jointly.

Par. 2. The hours in which physicians must be in attendance at said cilnics are hereby fixed as follows:

At least one physician between the hours of 1 and 3 p. m. of each week day and at least one between the hours of 3 and 5 p. m. of each week day (legal holidays excepted). The arrangement of service to be determined by the chief clinician.

Par. 3. The nurse or nurses shall be in attendance each week day from 9 a. m. to 5 p. m. (legal holidays excluded).

Par. 4. All other employees shall be in attendance each week day from 9 a. m. to 5 p. m. (legal holidays excluded).

Par. 5. It shall be the duty of the physician on duty to make a complete physical and microscopical examination of each and every individual who may present themselves for such purpose, particularly with a view to determining the existence of local and general conditions which might tend to the dissemination of diseases of a venereal character.

Par. 6. The result of such examination shall be reported to the office of the clinic and entered in full on the office records of said clinic on a suitable record card, provided for such purpose, which record shall contain the name, age, and residence of the person so examined, also a physical description of such person, i. e., color, height, weight, shade of hair, general build, and enumeration of any and all visible marks or scars, or any physical peculiarity that may be of value in establishing the identity of such individual. A photograph of such individual shall also be attached to the record of each.

Par. 7. It shall be the duty of the properly designated person in charge of the office of each clinic to affix his signature, also the date of each examination, to a card to be carried by each such individual, which signature shall certify to the fact that the regular examination of such person has been made and found satisfactory, on the date mentioned, in the event that such person be not found affected with venereal disease, but should such person be found to be infected, the card or book of such person shall be taken up by the office and an appropriate card indicating that such person is under treatment shall be issued, and said card shall entitle the holder thereof to free medical treatment at such clinic and it shall be the duty of the clinic physician to administer the necessary medical treatment requisite to render said individual a healthy person, or, if necessary, to enter such person in a hospital for proper treatment. When such person has been declared entirely recovered, a new card shall be issued to the individual, provided for in paragraph 2 of section 4 of these regulations.

Par. 8. It shall be the duty of the nurse to receive and prepare for medical examination and treatment all such applicants and to assist the attending physician in all cases applying at such clinic for examination and treatment, and to execute all orders for such attending physicians in matters relating to the purpose of these regulations.

Par. 9. It shall be the duty of the superintendent to see that a true and correct record is kept of all cases examined and treated by the attending physicians, as provided in paragraphs 5, 6, and 7 of this section, said record to be so kept as to be easily available at all times for ready reference. All such record cards shall be appropriately numbered, and such numbers shall accurately correspond to the number appearing on the card to be carried by each individual. Said superintendent shall execute all orders issued by the supervisory board in relation to the purposes of these regulations.

Par. 10. Said superintendent shall designate a proper person (who shall be confirmed by the president of the board of health) to receipt for all fees paid in for medical examinations as called for in these regulations, as hereinafter provided. Said receipts to be in duplicate, appropriately numbered, the original to be handed to the individual paying the fee, the duplicate to remain in a bound book kept for such purpose. A full, detailed and accurate record must be kept for all fees collected, such fees to be turned over to such custodian, in such manner and at such times as may be hereafter designated, and a receipt taken therefor.

Par. 11. Clinic record cards shall not be open for inspection by any person, other than the authorized employees of such clinics, the chief of police, and such members of the regular police department of this city and county, as may be designated by the written order of such chief of police and such other persons who may present a written order to such clinics, authorizing such inspection, said order to bear the signature of the health officer, and the president of the board of health, these officials to exercise a sound and reasonable discretion in the matter of issuing permits of this character.

General regulations.

Sec. 4.—Par. 1. All individuals of the class mentioned in the foregoing sections shall confine their activities solely to that portion of this city within the limits hereinbefore defined in paragraph 1 of section 1 of these regulations.

Par. 2. Every such person must submit to a medical examination at the hands of the duly appointed clinic physician at least twice in each week at such intervals as may hereafter be designated. Each person will be furnished with a clinic card bearing a number corresponding to the record card in such cases on file in said clinic, such card to contain all the particulars as enumerated in paragraph 6 of section 3 of these regulations, and to be accompanied by a photograph of the holder of such card.

Par. 3. Such clinic cards shall be retained by such individual as their personal property as evidence of conformity with these regulations and shall be readily available at all times for inspection by any person interested, and shall be produced on demand at any and all times when required so to do by such members of the regular police force of this city and county as described in paragraph 1 of section 5 of these regulations.

Par. 4. For each and every examination had by such individual, a fee of fifty cents will be charged, such amount to be in full payment for each such examination, said fee to be paid to the properly designated person as set forth in paragraph 10, section 3, of these regulations, who will furnish an official receipt for such amount to each person so examined. Under no circumstances shall any other fee or any gratuity whatever be demanded or accepted by any physician, nurse, or other attendant.

Par. 5. Clinic cards shall not be transferable under any circumstances, and any individual violating this section of these regulations will be arrested and prosecuted.

Duties of the police.

Sec. 5. Par. 1. As sanitary officers, it shall be the duty of the chief of police and such members of the regular police force of this city and county as may be particularly designated to cooperate with the board of health in the enforcement of the foregoing regulations.

Par. 2. A vigilant police supervision and inspection shall be maintained over all persons known to be or suspected to be of a questionable character, within the meaning and intent of these regulations, and at all times when necessary all such should be compelled to exhibit their clinic cards for the purpose of determining whether they have complied with the order requiring medical examination as provided for in paragraph 2 of section 4 of these regulations. In the event they should have failed to comply with such provisions, they should be ordered to appear for examination at once under penalty of arrest for failure so to do.

Par. 3. Any person found violating these regulations in regard to limits and boundaries, as set forth in section 1 of these regulations, should be properly instructed as to said provisions and in the event that they fail to comply with same they will be arrested and prosecuted.

[Ordinance adopted Feb. 14, 1911.]

TOWN OF EAST PROVIDENCE, R. I.

PRIVIES AND CESSPOOLS—CONSTRUCTION, MAINTENANCE, CLEANING, AND DISPOSAL OF CONTENTS.

SECTION 1. Every dwelling house, tenement house, or other building occupied by human beings, situated upon any street through which water is not conducted in pipes, shall have at least one suitable water-closet or privy, properly ventilated and communicating directly with the open air, for every 15 occupants of said dwelling house, tenement house, or other occupied building; occupants of two or more houses may use the same water-closet or privy, if access thereto be direct, and the above proportion of users be not exceeded.

SEC. 2. No privy vault or cesspool shall hereafter be constructed without special permit in writing from the town council, except as may be provided hereinafter in section 3. No privy vault or cesspool shall hereafter be constructed where the premises are situated on any lot abutting on a street or avenue having a foul water sewer. Permits for privy vaults or cesspools, if issued at all, will be issued on the condition that the structures will be for temporary use only, and that their use must cease and the structures be destroyed, or cleaned out, disinfected, and filled up with earth, sand, gravel, or ashes to the satisfaction of the health officer, upon written notice so to do from the town council, signed by the council clerk, when and as soon as connection with a public sewer can be made; provided, nevertheless, that the town council in its discretion may permit any cesspool after the premises have been connected with a public sewer, and the cesspool has been cleaned out and disinfected, to be used as a receptacle for water draining from the roofs of dwelling houses and other buildings.

No privy vaults may hereafter be constructed within 3 feet of the line of an adjoining lot (except by the consent of the owner of said lot) nor within 2 feet of the line of any private or public passageway, and must be so constructed that no surface water can find access to said vault. Every privy vault shall be sunk under the ground, contain at least 6 cubic feet, be constructed of brick, stone or Portland cement, and be made water-tight. Every such vault shall have convenient approaches for opening and cleaning, and such approaches shall be properly covered. Each outhouse or compartment of an outhouse built over a privy vault must have independent and efficient means of ventilation. All openings, save those of the seats, must be securely screened with copper or tinned wire netting of 16 mesh, and these screens must be maintained in effective condition. Each opening in the seat must be provided with a close-fitting hinged cover, so arranged that it will remain open so long as it is held open and will close automatically when the seat is vacated.

No cesspool hereafter may be constructed within 20 feet of any street, road, or public place, or within 50 feet of any well or spring, the water of which is used for drinking purposes, and, when so required by the town council, every cesspool shall be made water-tight. Every cesspool shall be properly covered with stone or iron, so that the cover may be readily removed and the contents inspected.

No well shall be used as a cesspool or privy vault, and no cesspool or privy vault shall be allowed under a sidewalk or building occupied by human beings.

SEC. 3. The town council may order every lodging house, tenement house, or dwelling house, unless the same be connected with a public sewer, to be provided with a cesspool, properly connected with the house drain, of such dimensions and built in such situation and such manner as it may, in its discretion, determine; and it may fix the time within which such order must be complied with.

SEC. 4. No person shall deposit or allow to be deposited in any privy vault or cesspool any ashes, swill, rubbish, refuse, or any other such substance except that of which any such place is the appropriate receptacle, nor shall any surface water be allowed to run into any vault or cesspool.

SEC. 5. No person shall allow the contents of any cesspool to rise within 1 foot of any part of the top or to allow any privy vault or cesspool to become in any way a nuisance or offensive; and when required by the town council any owner of such privy vault or cesspool shall disinfect the same in such manner as may be required by said town council.

SEC. 6. No person shall permit any privy, urinal, water-closet, or other fixture, or any drain, waste pipe, soil pipe, or catch basin to become a nuisance or in any way offensive; nor shall any person allow any injurious substance to pass into any drain or waste pipe or allow any drain, waste pipe, or soil pipe to become obstructed or to leak. But if such drain, waste pipe, or soil pipe shall become obstructed or shall leak the owner, agent, occupant, or other person having charge of the premises on which such drain, waste pipe, or soil pipe is situated shall find and remove such obstruction and find and remove such leak. If any sewer gas or foul odor shall escape from any drain, soil pipe, waste pipe, or any fixture into any cellar or any part of an occupied building the owner, agent, or lessee of such cellar or building shall immediately find out and remedy whatever may cause such escape.

[Chap. 4 of an ordinance adopted Aug. 2, 1911.]

SECTION 1. No person shall bring or cause to be brought into this town, or shall carry into or through any public highway or street in this town, any part of the contents of any privy vault, cesspool, or slaughterhouse offal, or other offensive matter without first obtaining a license from the town council for that purpose, the number of said license to be placed on the vehicle used to convey said matter, and the party obtaining such license shall pay to the town clerk the sum of $1 therefor. Such person shall also have his wagon and tubs examined by the health officer and shall obtain a permit from him before using the same, which permit must be sent with the wagon at all times so as to be shown to the police when called for.

SEC. 2. No person or persons shall at any time whatsoever carry into or through any public highway or street in this town any part of the contents of any privy vault, cesspool, slaughterhouse offal, or any offensive matter in any cart, wagon, or other vehicle, or tubs, which shall not be kept effectually covered and perfectly watertight.

SEC. 3. The box of the wagon used for the carrying of the contents of privy vaults, cesspools, slaughterhouse offal, or any offensive matter shall be well painted in such manner as the health officer may prescribe, and must be kept clean on the outside. The license number and the number of cubic feet capacity must be well painted on tin, the figures to be not less than 3 inches in size, must be placed on both sides of the box, and must be kept clean so as to be easily read.

SEC. 4. No cart, wagon, or other vehicle having therein any part of the contents of any privy vault, cesspool, slaughterhouse offal, or any offensive matter shall be permitted to stand (except while loading) in any public street or highway in this town.

SEC. 5. From the 1st day of May to the 1st day of November the night soil must be disinfected previous to removal. The removal of night soil shall always be done in the daytime unless by special permit. From the 1st day of August to the 1st day of December the tubs only can be used.

SEC. 6. Whenever any person shall convey into this town the contents of any privy vault, cesspool, slaughterhouse offal, or other offensive matter, to the extent that it becomes a nuisance or obnoxious, or cause the same to be done by others, it shall be the duty of the health officer to serve a written notice upon the person or persons causing the same, ordering him or them to forthwith discontinue the same, and if said order is not complied with within 24 hours, the town council shall revoke his or their license, if he or they have any, and a further penalty shall be imposed by a fine of not less than $5 nor more than $20.

SEC. 7. No person shall dump any part of the contents of any privy vault, cesspool, or slaughterhouse offal, or other offensive matter, within the limits of the compact portions of the town, without the written permission of the health officer. Nor shall any person dump the same in any portion of the town within 500 feet of any dwelling house belonging to or occupied by any other person or corporation except by the written consent of the health officer.

SEC. 8. The health officer shall have power to forbid the dumping of any part of the contents of any privy vault, cesspool, or slaughterhouse offal, or other offensive matter in any part of the town, in case he should find the same to be injurious to health or offensive to residents in the vicinity. He shall also have power, should he deem it necessary, to notify all persons holding licenses from the town council for carrying the contents of any of the foregoing, within what limits the same may be dumped, and no person shall thereafter dump the same in any part of this town except within the limits defined by the health officer.

SEC. 9. Any person who shall bring or cause to be brought into this town any part of the contents of any privy vault, cesspool, slaughterhouse offal, or other offensive matter whatsoever, in any cart, wagon, or other vehicle and deposit the same in any place where it may impair health, or by offensive odors annoy persons within their dwellings or while traveling on any of the public streets or highways in the compact part of this town, shall be fined not more than $20 or be imprisoned for the term of 10 days, and his license shall be revoked.

Sec. 10. No person shall remove, carry, or transport over, upon, or through any street or highway of the town of East Providence any diseased or putrid meat condemned by the health officer of said town, or the dead body of any horse, ass, mule, ox, cow, bull, hog, or other large animal, not slaughtered and in condition for use as food, except as may be provided by the statutes of the State, unless specially authorized so to do by the town council; and every person violating the provisions of this section shall pay for each offense a fine of not less than $10 nor more than $20.

Sec. 11. Any person violating any provision of this chapter wherein no penalty is herein otherwise prescribed, shall be fined not less than $5 nor more than $20 for every violation thereof, and shall be fined not exceeding $20 for each day's continuance of the said violation after the service of the notice issued upon the first complaint.

[Chap. 31 of an ordinance adopted Aug. 2, 1911.]

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 27, 1912.

Diseases.	Cases.	Deaths.	Diseases.	Cases.	Deaths.
Alameda, Cal	1	1	Lowell, Mass	1	
Boston, Mass	4	1	Moline, Ill		1
Cambridge, Mass	1		Nashville, Tenn	4	1
Chicago, Ill		1	New Orleans, La	4	
Cincinnati, Ohio	3	2	Newport, Ky	2	
Cleveland, Ohio	2	1	New York, N. Y	6	2
Dayton, Ohio		1	Oklahoma, Okla	1	1
El Paso, Tex	3		Omaha, Nebr	2	2
Haverhill, Mass	5	1	Pittsburgh, Pa	1	
Kansas City, Kans	4		Providence, R. I	1	
Kansas City, Mo	7	10	St. Louis, Mo	5	2
Lexington, Ky	1		San Antonio, Tex	7	4
Logansport, Ind		1	Springfield, Ill		1
Los Angeles, Cal		1			

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 27, 1912.

Diseases.	Cases.	Deaths.	Diseases.	Cases.	Deaths.
Baltimore, Md		1	Lancaster, Pa	1	
Binghampton, N. Y	1		Milwaukee, Wis	2	
Boston, Mass		1	Morristown, N. J	1	
Braddock, Pa	1		Newark, N. J		2
Bridgeport, Conn	1		New York, N. Y	35	15
Camden, N. J	1		Philadelphia, Pa	11	2
Cincinnati, Ohio	4	2	Pittsburgh, Pa	4	2
Cleveland, Ohio	5	1	Providence, R. I		1
Denver, Colo	5		Reading, Pa	1	
Fall River, Mass		1	Rockford, Ill		1
Hartford, Conn	2		St. Louis, Mo	12	
Jersey City, N. J		1	Wilkes-Barre, Pa	1	
Johnstown, Pa	1				

PELLAGRA.

During the week ended April 27, 1912, pellagra was reported as follows: East Orange, N. J., 1 death; Knoxville, Tenn., 1 death; New Orleans, La., 1 death; Pawtucket, R. I., 2 deaths.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED APR. 27, 1912.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Altoona, Pa		3	Marlboro, Mass		4
Ann Arbor, Mich	2		Medford, Mass		1
Auburn, N. Y	3	2	Moline, Ill		2
Aurora, Ill		1	Montgomery, Ala		1
Baltimore, Md		15	Mount Vernon, N. Y	1	
Biddeford, Me	1	1	Nashville, Tenn		5
Binghamton, N. Y	4	1	Newark, N. J		7
Boston, Mass		34	New Bedford, Mass		3
Braddock, Pa	1	1	Newburyport, Mass		1
Bridgeport, Conn		1	New Orleans, La		4
Cambridge, Mass		2	New York, N. Y		118
Cambridge, Ohio	2	2	Oklahoma City, Okla		2
Chelsea, Mass		3	Omaha, Nebr		3
Chicago, Ill	39	105	Philadelphia, Pa	35	43
Chicopee, Mass		2	Pittsfield, Mass		3
Cincinnati, Ohio		7	Pittsburgh, Pa	25	30
Cleveland, Ohio	22	6	Providence, R. I		10
Cumberland, Md		1	Racine, Wis		4
Dayton, Ohio		7	Reading, Pa	1	3
Denver, Colo		6	Richmond, Va		3
Elmira, N. Y		1	Roanoke, Va		1
El Paso, Tex		3	Rockford, Ill		3
Fall River, Mass		1	Saginaw, Mich		1
Galesburg, Ill	2	2	Salem, Mass		1
Harrisburg, Pa	2	2	San Antonio, Tex		1
Hartford, Conn		7	Saratoga, Springs, N. Y		2
Homestead, Pa	3	1	South Bethlehem, Pa	2	
Kansas City, Mo	6	3	South Omaha, Nebr	1	1
La Crosse, Wis		1	Spokane, Wash		1
Lancaster, Pa	1		Springfield, Ill		1
Lawrence, Mass		6	Springfield, Mass		2
Lima, Ohio		2	Superior, Wis		1
Los Angeles, Cal	4	10	Taunton, Mass		3
Lowell, Mass		5	Toledo, Ohio		2
Lynchburg, Va		3	Washington, D. C		13
Lynn, Mass		3	Wilkes-Barre, Pa		1
Malden, Mass		1	Wilmington, Del		1
Manchester, N. H	3	3	Yonkers, N. Y		8

POLIOMYELITIS.

During the week ended April 27, 1912, poliomyelitis was reported as follows: Boston, Mass., 1 death; Chicago, Ill., 1 death; New York, N. Y., 9 cases; Orange, N. J., 1 case; Philadelphia, Pa., 1 death; Yonkers, N. Y., 1 case.

TETANUS.

During the week ended April 27, 1912, tetanus was reported as follows: Milwaukee, Wis., 1 death; Pittsburgh, Pa., 1 case with 1 death; Richmond, Va., 1 death.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

SMALLPOX IN THE UNITED STATES—Continued.

REPORTS RECEIVED DURING WEEK ENDED MAY 17, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Colorado:				
Counties—				
Archuleta	Apr. 1-30	6		
Boulder	do	15		
Denver	do	7		
Las Animas	do	6		
Lincoln	do	1		
Montrose	do	3		
Otero	do	1		
Pueblo	do	1		
Washington	do	14		
Weld	do	6		
Total for State		60		
Connecticut:				
Counties—				
Fairfield	Apr. 1-30	1		
New Haven	do	97		
Windham	do	40		
Total for State		138		
Iowa:				
Counties—				
Appanoose	Apr. 1-30	17		
Boone	do	1		
Butler	do	6		
Cerro Gordo	do	2		
Emmet	do	1		
Harrison	do	2		
Linn	do	1		
Montgomery	do	1		
Pocahontas	do	1		
Scott	do	2		
Worth	do	4		
Wright	do	3		
Total for State		41		
*Louisiana:				
New Orleans	Apr. 27-May 4	6		
Massachusetts:				
Counties—				
Bristol	Apr 1-30	1		
Essex	do	98		
Middlesex	do	1		
Total for State		100		
Mississippi:				
Counties—				
Attala	Apr. 1-30	1		
Benton	do	1		
Jackson	do	2		
Lauderdale	do	60	1	
Panola	do	3		
Pike	do	6		
Tate	do	1		
Yalobusha	do	1		
Total for State		75	1	
*Missouri:				
St. Louis	Apr. 27-May 4	2		
North Dakota:				
Counties—				
Benson	Apr. 1-30	5		
Bottineau	do	2		
Cass	do	1		
Grand Forks	do	5		
Lamoure	do	2		
Total for State		15		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended May 17, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Ohio:				
Counties—				
Athens	Apr. 1-30	40		
Columbiana	do	1		
Hamilton	do	3		
Hancock	do	1		
Madison	do	3		
Miami	do	1		
Montgomery	do	108		
Paulding	do	1		
Portage	do	1		
Total for State		159		
***Tennessee:**				
Chattanooga	Apr. 28-May 4	1		
Knoxville	do		2	
Shelby County	Apr. 1-30	13		
Total for State		14	2	
Utah:				
Counties—				
Beaver	Mar. 1-31	1		
Boxelder	do	10		
Cache	do	32		
Carbon	do	3		
Davis	do	11		
Emery	do	1		
Juab	do	1		
Millard	do	1		
Salt Lake	do	137		
Tooele	do	3		
Utah	do	29		
Wasatch	do	15		
Weber	do	45		
Total for State		289		
Wisconsin:				
Counties—				
Adams	Apr. 1-30	1		
Barron	do	1		
Brown	do	1		
Buffalo	do	3		
Burnett	do	1		
Columbia	do	1		
Dane	do	6		
Douglas	do	1		
Green Lake	do	1		
Jackson	do	11		
Jefferson	do	3		
La Crosse	do	2		
Marathon	do	2		
Marinette	do	9		
Milwaukee	do	4		
Monroe	do	1		
Pierce	do	1		
Portage	do	1		
Trempealeau	do	1		
Walworth	do	1		
Waushara	do	3		
Winnebago	do	1		
Wood	do	1		
Total for State		57		
Grand total for the United States		956	3	

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES. FOR WEEK ENDED APR. 27, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	200	7	1	13	....	7	1	....	....	42	39	7	2
Boston, Mass	670,585	232	32	2	177	....	25	....	....	....	84	25	4	1
Chicago, Ill	2,185,283	695	136	22	212	....	276	21	5	....	162	81	12	7
Cleveland, Ohio	560,663	187	25	6	108	....	28	4	....	....	43	17	5	1
New York, N. Y	4,766,883	1,529	273	23	1,904	31	380	30	....	....	440	188	32	9
Philadelphia, Pa	1,549,008	475	62	9	28	1	66	4	....	....	86	55	12	3
Pittsburgh, Pa	533,905	169	9	....	80	1	53	1	....	....	21	19	4	1
St. Louis, Mo	687,029	177	27	....	43	....	27	....	4	....	36	17	1	....
Cities having from 300,000 to 500,000 inhabitants.														
Cincinnati, Ohio	364,463	123	11	1	18	....	32	....	....	....	38	23	4	....
Detroit, Mich	465,766	162	16	....	35	1	1	....	....	....	....	....	....	....
Los Angeles, Cal	319,198	115	9	1	14	....	11	1	2	....	18	22	3	1
Milwaukee, Wis	373,857	106	15	3	151	....	31	2	2	....	30	14	10	2
Newark, N. J	347,469	113	17	....	76	3	16	....	....	....	34	14	2	....
New Orleans, La	339,075	113	7	....	11	....	9	....	13	....	24	13	3	....
San Francisco, Cal	416,912	149	6	....	42	1	5	....	1	....	20	17	2	1
Washington, D. C	331,069	128	3	....	40	....	4	....	....	....	22	12	10	1
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	106	4	....	....	....	9	....	2	....	....	16	....	1
Jersey City, N. J	267,779	65	....	1	....	....	....	....	....	....	....	5	....	....
Kansas City, Mo	248,381	24	5	1	7	....	11	1	....	....	3	9	....	....
Providence, R. I	224,326	74	14	1	66	5	9	1	....	....	3	9	2	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	27	4	....	1	....	6	....	....	....	1	1	1	....
Cambridge, Mass	104,839	26	4	....	112	1	5	....	....	....	6	2	....	....
Dayton, Ohio	116,577	37	2	....	35	....	....	....	3	....	....	5	1	....
Fall River, Mass	119,295	38	2	1	....	....	....	....	....	....	5	7	1	1
Grand Rapids, Mich	112,571	26	....	....	1	....	5	....	....	....	2	1	3	2
Lowell, Mass	106,294	45	2	....	35	1	1	....	....	....	1	9	1	2
Nashville, Tenn	110,364	39	1	....	1	....	....	....	1	....	12	4	3	....
Omaha, Nebr	124,096	30	1	....	....	....	4	....	1	....	....	3	....	....
Richmond, Va	127,628	38	....	....	32	....	1	....	2	....	5	5	1	....
Spokane, Wash	104,402	....	3	....	45	2	....	....	5	....	....	1	....	....
Toledo, Ohio	168,497	63	....	1	27	....	7	....	....	....	....	8	3	....
Worcester, Mass	145,986	48	2	....	20	3	12	....	....	....	13	5	....	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	18	2	....	....	....	3	....	....	....	1	1	....	....
Bayonne, N. J	55,545	11	1	....	11	....	10	1	....	....	....	1	....	....
Brockton, Mass	56,878	....	2	....	69	....	2	....	....	....	2	....	....	....
Camden, N. J	94,538	....	1	....	....	....	2	....	....	....	11	....	3	....
Duluth, Minn	78,466	....	....	....	....	....	3	....	....	....	4	4	1	1
Evansville, Ind	69,647	17	....	....	....	....	1	....	....	....	....	1	5	3
Fort Wayne, Ind	63,933	14	2	....	14	....	....	....	....	....	....	11	....	....
Harrisburg, Pa	64,186	15	3	....	148	....	....	....	4	....	1	....	....	....
Hartford, Conn	98,915	....	6	....	28	....	5	....	....	....	4	1	....	....
Hoboken, N. J	70,324	....	4	....	1	....	2	....	....	....	9	....	....	....
Johnstown, Pa	55,482	13	4	....	1	....	....	....	....	....	....	2	2	....
Kansas City, Kans	82,331	....	1	....	2	....	2	....	....	....	1	....	1	....
Lawrence, Mass	85,892	31	2	....	6	....	1	....	....	....	3	7	5	....
Lynn, Mass	89,336	17	6	1	9	....	6	....	....	....	6	....	3	1
Manchester, N. H	70,063	29	2	....	7	....	3	....	....	....	2	2	....	....
New Bedford, Mass	96,652	34	1	....	5	....	2	....	....	....	8	2	....	....
Oklahoma City, Okla	64,205	....	....	....	....	....	....	....	1	....	....	2	....	....
Passaic, N. J	54,773	11	1	....	59	1	4	....	....	....	3	....	....	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Apr. 27, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Pawtucket, R. I	51,622											1		
Reading, Pa	96,071	25	2		2		5				1	2	1	
Saginaw, Mich	50,510	15	5		1		1		1		2	4	3	
San Antonio, Tex	96,614	55				1	1					9		
South Bend, Ind	53,684	16			1				1			1		
Springfield, Ill	51,678	21	1		1				1			2	2	
Springfield, Mass	88,926	16	4		21		3				8	3		
Trenton, N. J	96,815	29	1				3				2	2		
Wilkes-Barre, Pa	67,105	24	3		1		1	1			1	2		
Wilmington, Del	87,411	25										3		
Yonkers, N. Y	79,803	27	3		2		12				7	1		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	11	2	1			1						1	
Auburn, N. Y	34,668	15										1		
Aurora, Ill	29,807	8					1							
Berkeley, Cal	40,434	7	5		41		1					2		
Binghamton, N. Y	48,443	17	1		9	1						1	1	2
Brookline, Mass	27,792	4	6		11						3			
Chattanooga, Tenn	44,604		3				1		1		1			
Chelsea, Mass	32,452	10			24						3	2	1	
Chicopee, Mass	25,401	8			6	1					2			
Danville, Ill	27,871	7			1		1		1			1		
East Orange, N. J	34,371	8			11						2			
Elmira, N. Y	37,176	11	3	1	24									
El Paso, Tex	39,279	35			1		2					7		
Everett, Mass	33,484	4			20						3			
Fitchburg, Mass	37,826	8	1	1							1			
Haverhill, Mass	44,115	11	3		13		2				2		1	
Knoxville, Tenn	36,346	9			7				5			1		
La Crosse, Wis	30,417	12	1				1					1		
Lancaster, Pa	47,227				84		1				3			
Lexington, Ky	35,099	8			1						2	1		
Lima, Ohio	30,508	13			5									
Lynchburg, Va	29,494	9			25	1	1				1	1		
Malden, Mass	44,404	6	2		17						1			
Montgomery, Ala	38,136	16	2				2		2					
Mount Vernon, N. Y	30,919		9		26		2				1			
Newcastle, Pa	36,280		5		4									
Newport, Ky	30,309	6					4				2	2		
Newton, Mass	39,806	11			5							1		
Niagara Falls, N. Y	30,445	11	1		1				1		1			1
Norristown, Pa	27,875	6		1	1							1	1	
Orange, N. J	29,630	11			5									
Pasadena, Cal	30,291						1				1	1		
Pittsfield, Mass	32,121	13	1								6	1		
Portsmouth, Va	33,190	13							2					
Racine, Wis	38,002	9	4				4							
Roanoke, Va	34,874	7			28		1					1		
Rockford, Ill	45,401	20					4						6	1
Salem, Mass	43,697	14										1		
South Omaha, Nebr	26,259	2	1											
Superior, Wis	40,384	8	1						1					
Taunton, Mass	34,259	17									3	3	1	
Waltham, Mass	27,834	6	1		34	1						1		
West Hoboken, N. J	35,403		3		2						2			
Williamsport, Pa	31,860	8	1		31							1	1	
Wilmington, N. C	25,748	9	1		6				1		2	1		
York, Pa	44,750		1		1						3			
Zanesville, Ohio	28,026	6											1	

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Apr., 27, 1912—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	9			6						2	1		
Ann Arbor, Mich	14,817	12												
Beaver Falls, Pa	12,191		1				2				1		1	
Bennington, Vt		2			1	1								
Biddeford, Me	17,079	15			1	1					1	1		
Braddock, Pa	17,759	2	1				1							
Cambridge, Ohio	11,327	6			1							1		
Carbondale, Pa	17,040	9	1		11		7	1						
Clinton, Mass	13,075	3			1									3
Coffeyville, Kans	12,687										3			
Columbus, Ga	20,554	8												
Columbus, Ind		2							2		1			
Concord, N. H	21,497	12			22	1						1		
Cumberland, Md	21,839	10	1		70							1	9	
Dunkirk, N. Y			2								1	1	1	
Galesburg, Ill	20,089	10									2	2		
Harrison, N. J	14,498				1									
Homestead, Pa	18,710	7	1				1				2	2		
Kearny, N. J	18,659	4			6		4					1	1	
La Fayette, Ind	20,081	8										1		
Logansport, Ind	19,050	9											7	1
Marinette, Wis	14,610	3	1				1					1		
Marlboro, Mass	14,577	9									1			
Massillon, Ohio		4										1		
Medford, Mass	23,156	6			40							1	3	
Melrose, Mass	15,715	3			26						2			
Moline, Ill	24,199	4												
Morristown, N. J	12,507	3			7							1		
Nanticoke, Pa	18,509	2												
Newburyport, Mass	19,240	7										1		
North Adams, Mass	22,012	9			9		1				1	1		
Northampton, Mass	19,431	5	2		10	1					1			
Ottumwa, Iowa	22,012	4												
Palmer, Mass		1												
Plainfield, N. J	22,050	1	1		6						2			
Portsmouth, N. H									1					
Pottstown, Pa		6										1		
Rutland, Vt	13,546	1			1									
Saratoga Springs, N. Y		7			1									
South Bethlehem, Pa	19,973	6	1	1	11						1		1	
Steelton, Pa	14,246	2	2		1				1					
Warren, Pa	11,080	2										1		
Wilkinsburg, Pa	18,294	5	1				2				2	1		
Woburn, Mass	15,308	6	1		9		1							

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

MICHIGAN.—Month of March, 1912. Population, 2,810,173. Cases of communicable disease reported: Diphtheria 222, measles 167, scarlet fever 510, smallpox 90, tuberculosis 210, typhoid fever 106.

OREGON.—Month of October, 1911. Population, 672,765. Total number of deaths from all causes 546, including diphtheria 2, scarlet fever 1, tuberculosis 65, typhoid fever 16. Cases reported: Diphtheria 22, measles 3, scarlet fever 30, smallpox 10, tuberculosis 16, typhoid fever 59.

Month of November, 1911. Total number of deaths from all causes 443, including diphtheria 3, tuberculosis 32, typhoid fever 13. Cases reported: Diphtheria 29, measles 9, scarlet fever 47, smallpox 33, tuberculosis 32, typhoid fever 39.

Month of December, 1911. Total number of deaths from all causes 432, including diphtheria 3, scarlet fever 4, smallpox 1, tuberculosis 28, typhoid fever 7. Cases reported: Diphtheria 35, measles 8, scarlet fever 80, smallpox 92, tuberculosis 21, typhoid fever 25.

FOREIGN AND INSULAR.

BRAZIL.

Pernambuco—Epidemic Yellow Fever.

Consul Griffith reports April 2: Yellow fever is present in Pernambuco in epidemic form, with more than 60 reported cases.

CHINA.

Hongkong—Plague and Smallpox—Plague-infected Rats.

Surg. Brown reports: During the week ended March 30, 1912, 27 cases of plague with 21 deaths and 20 cases of smallpox with 12 deaths were reported at Hongkong.

During the same period 2,205 rats were examined for plague infection. Two plague-infected rats were found.

GREECE.

Cerebrospinal Meningitis.

Consul General Gale at Athens reports: During the week ended April 20, 1912, 33 cases of cerebrospinal meningitis, occurring in 11 places, were reported in Greece.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred February 9, 1912; 2 fatal cases February 25, 1912; and a fatal case March 18, 1912. During the week ended March 2, 1912, 49 plague-infected rats were found. The last plague-infected rat was found April 17, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-prevention Work.

Chief Quarantine Officer Trotter reports:

Week ended Apr. 20, 1912.

Total rats and mongoose taken	564
Rats trapped	557
Mongoose trapped	7
Rats examined bacteriologically	469
Classification of rats trapped:	
Mus alexandrianus	56
Mus musculus	100
Mus norvegicus	67
Mus rattus	334
Average number of traps set daily	1,720

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended March 23, 1912, 57 deaths from cholera and 133 from plague were reported at Calcutta; in all Bengal, 4,235 cases of plague with 3,616 deaths; in all India, 19,455 cases of plague with 15,819 deaths.

MEXICO.

Typhus Fever.

Consul General Shanklin reports the occurrence of 103 cases of typhus fever with 28 deaths at Mexico City during the week ended March 16, 1912.

Yellow Fever at Merida.

During the week ended May 4, 1912, a fatal case of yellow fever was reported at Merida. The total number of cases from August 1, 1911, to date is 66, with 30 deaths.

Yellow Fever at San Juan Bautista, State of Tabasco.

The American consul reports May 11 the occurrence of a case of yellow fever at San Juan Bautista, capital of the State of Tabasco.

RUSSIA.

Odessa—Typhus Fever.

Consul Grout reports that during the two weeks ended April 13, 1912, 79 cases of typhus fever with 10 deaths were reported at Odessa.

VENEZUELA.

Plague.

The American consul at La Guair reports April 22 the occurrence of 4 cases of plague at Caracas. These cases occurred in an institution in the city.

WEST INDIES.

Barbados—Yellow Fever on Vessel.

Consul Martin reports the arrival at Bridgetown of a case of yellow fever April 27 on the steamship *Francis*. The case ended fatally.

The *Francis* sailed April 22 from Para for Barbados.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED MAY 17, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Mar. 17-23	8	5	
Calcutta	do		57	
Madras	Mar. 31-Apr. 6	1	1	Madras Presidency, Mar. 1-31: Cases 2,153, deaths 1,344.
Moulmine	Mar. 17-23	3	3	
Turkey in Asia:				
Adana	Mar. 21-Apr. 8	25	9	

YELLOW FEVER.

Brazil:				
Manaos	Apr. 7-13		3	
Pernambuco	Apr. 2			Epidemic.
Rio de Janeiro	Mar. 17-Apr. 6	3	2	
Chile:				
Tocopilla	Apr. 15			Still present.
Mexico:				
Merida	Apr. 28-May 2	1	1	
San Juan Bautista	May 11	1		
Venezuela:				
Caracas	Dec. 1-31		10	
	Jan. 1-31		4	
	Feb. 1-29		4	
West Indies:				
Barbados—				
Bridgetown	Apr. 27	1	1	From steamship Francis, from Para.

PLAGUE.

Brazil:				
Para	Apr. 7-20	4	2	
India:				
Bombay	Mar. 24-Apr. 6	268	226	
Calcutta	Mar. 17-23		133	
Karachi	Apr. 1-6	105	95	
Java:				
Pasoeroean Residency	Mar. 24-30	5	4	
Mauritius	Feb. 23-29	1		
Persia:				
Bushire	Mar. 3-30	103	69	
Peru:				
Salaverry	Apr. 17			Present in vicinity.
Turkey in Asia:				
Jiddah	Mar. 14-27	7	4	
Venezuela:				
Caracas	Apr. 22	4		In an institution.

SMALLPOX.

Arabia:				
Aden	Mar. 26-Apr. 8	4	1	
Austria-Hungary:				
Galicia	Apr. 7-13	2		
Brazil:				
Para	7-20	4	3	
Rio de Janeiro	r. 6	3		
Canada:				
Montreal	y 4	4		
Ottawa		2		
Summersto				Epidemic; 10 miles from Cornwall.
Toronto		2		
hile:				
Valparais		2		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended May 17, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Dalny	Apr. 1-6	1		
Egypt:				
Cairo	Mar. 26-Apr. 1	1		
France:				
Paris	Apr. 7-13	2		
Germany				Total Apr. 21-27: Cases, 12.
Hamburg	Apr. 14-20	2		
India:				
Bombay	Mar. 24-Apr. 6	204	134	
Calcutta	Mar. 17-23		5	
Karachi	Mar. 24-30	1	1	
Madras	Apr. 1-6	8	1	
Italy:				
Leghorn	Apr. 14-27	5		
Palermo	Apr. 14-20	6	1	
Japan:				
Formosa	Mar. 17-23	39	33	
Java:				
Batavia	Mar. 24-30	4	1	
Mexico:				
Mexico	Mar. 3-23	57	22	
Portugal:				
Lisbon	Apr. 14-20	1		
Roumania	Jan. 1-31	2,935	143	
Russia:				
Moscow	Mar. 24-30	7	1	
Riga	Mar. 27-Apr. 16	35		
St. Petersburg	Apr. 1-6	6	4	
Spain:				
Barcelona	Apr. 14-20		1	
Valencia	do	27		
Teneriffe:				
Santa Cruz	Apr. 7-13		1	
Turkey in Asia:				
Beirut	do	25		
Turkey in Europe:				
Constantinople	Apr. 15-21		21	

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAY 10, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total year 1911: Cases, 3,634; deaths, 2,919, including report, p. 2092, vol. 1.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 10, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-Mar. 16	116	96	
Calcutta	Nov. 5-Mar. 16		944	
Madras	Nov. 26-Mar. 30	548	446	Madras Presidency Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-Feb. 29: Cases, 18,267; deaths, 11,563.
Moulmine	Feb. 18-Mar. 16	4	4	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Feb. 29	104	86	
Indo-China:				
Saigon	Nov. 20-Mar. 18	1,544	1,082	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands				Third quarter, 1911: Manila, 1, fatal case; Provinces, 27 cases and 22 deaths. Fourth quarter, 1911: Manila, no case and no death; Provinces, 22 cases, 20 deaths.
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Mar. 24		1,244	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2-Mar. 20	21	5	
Aleppo	Jan. 26-Apr. 13	41	25	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 10, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia—Continued.				
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14-26	29		
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Bahia	Mar. 23-25	6	1	
Ceara	Jan. 1-Feb. 29		5	
Manaos	Nov. 19-Mar. 30		54	
Para	Mar. 3-9	2	2	Dec. 9-16: 1 fatal case.
Pernambuco	Jan. 1-Mar. 15		14	
Canal Zone:				
Culebra Island quarantine	Jan. 1-31	1		From a vessel from Guayaquil.
Chile:				
Tocopilla	Apr. 11	90	25	And vicinity.
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Feb. 29	13	6	
Guayaquil	Nov. 16-Feb. 29	118	54	
Huigra	Feb. 1-29			1 case.
Milagro	do	16	7	
Naranjito	do	2	2	
Yaguachi	do			1 case.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb. 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida	Nov. 12-Mar. 23	20	9	Total Aug. 1-May 2: Cases, 56; deaths, 30.
Puerto Mexico (Coatzacoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Feb. 15	30	13	
La Guaira	Mar. 17-Apr. 1	2	2	
Macuto	Mar. 16-19	1	1	
Maiquetia	Feb. 24-Mar. 9	3	1	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Arabia:				
Aden	Mar. 5-25	2	1	
Azores:				
Fayal	Jan. 10			Still present.
Terceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Apr. 6	20	13	
Pernambuco	Oct. 1-Feb. 29		9	
Rio de Janeiro	Nov. 12-Feb 10	7	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 10, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12-Apr. 6	24	11	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Chaochowfu	Mar. 10-16			Present.
Hongkong	Dec. 9-Mar. 23	80	71	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1,817; deaths, 1,324. Dec. 31-Feb. 9: Cases, 65, deaths, 63.
Pasoeroean Residency, Malang District.	Nov. 12-Mar. 23	138	92	
Soerabaya	Oct. 17-27	2		
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Reports not available because of revolution.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Alexandria	Mar. 22	1	1	
Provinces—				
Assiout	Jan. 1-Mar. 22	50	32	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	Jan. 1-Mar. 22	29	18	
Behera	Jan. 1-Mar. 16	4	2	Sept. 11-16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16-Apr. 4	23	7	
Fayoum	Jan. 1-26	1		
Galioubeh	Jan. 1-Mar. 10	4	3	Oct. 5-Dec. 26: Case, 1.
Garbieh	Jan. 1-Mar. 17	18	8	
Girgeh	Mar. 28	1	1	
Kena	Jan. 1-Apr. 4	69	51	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2-Mar. 7	3	1	
Minieh	Jan. 1-Apr. 4	22	4	Dec. 13: Case, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-Mar. 23	419	375	
Calcutta	Nov. 11-Mar. 16		196	
Karachi	Nov. 26-Mar. 30	547	468	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Feb. 29	166	158	
Bombay Presidency and Sind.	Oct. 29-Mar. 23	58,396	42,824	
Madras Presidency	do	10,129	7,869	
Bengal	do	37,491	31,764	
United Provinces	do	86,612	76,987	
Punjab	do	10,541	8,062	
Burma	do	1,428	1,302	
Eastern Bengal and Assam.	Jan. 1-Feb. 24	2	2	
Central Provinces	Oct. 29-Mar. 23	26,600	21,144	
Coorg	do	88	52	
Mysore State	do	8,631	6,688	
Hyderabad State	do	25,820	23,394	
Central India	do	9,096	7,453	
Rajputana and Ajmere Merwara.	do	1,533	1,234	
Kashmir	Feb. 3-Mar. 23	114	51	
North West Province	Oct. 29-Feb. 24	2	2	Total for India, Oct. 29-Mar. 23: Cases, 276,483; deaths, 228,848. Total year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Mar. 4	33	5	
Japan:				
Formosa	Mar. 7-16	13	7	
Mauritius	Nov. 3-Feb. 22	70	36	
Persia:				
Bushire	Feb. 4-Mar. 2	31	14	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 10, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Peru:				
Departments—				
Callao	Oct. 1-21	1		City, in November, 1 case; in January, 3 cases with 2 deaths; Mar. 1-26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Apr. 10, 22 cases in the lazaretto at Trujillo.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on p. 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Mar. 23		5	
South Africa:				
Durban	Jan. 14-Apr. 5			Total: Cases 24, deaths 19.
Straits Settlements:				
Singapore	Nov. 5-Mar. 16	29	25	
Turkey in Asia:				
Basra	Feb. 13	1	1	A stoker on s. s. Nicomedia from Bushire.
Jiddah	Jan. 13-Mar. 13	9	5	
Venezuela:				
Caracas	Mar. 12-Apr. 13	2	2	Apr. 22, present.
West Indies:				
Trinidad	Apr. 2-May 1	6		
At sea	Mar. 1-11	1	1	On s. s. Macedonia from Bombay to Aden.

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Mar. 25	18	9	And vicinity.
Argentina:				
Buenos Aires	Jan. 1-31		2	Oct. 1-31, 6 deaths. No deaths in Nov. or Dec., 1911.
Rosario	Oct. 1-Jan. 31		40	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	2		
Budapest	Jan. 4-10	25		
Galicia	Dec. 24-Apr. 6	28	1	
Krain	Jan. 14-20	7		
Trieste	Dec. 3-Apr. 6	2		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-Mar. 9	3		
Vienna	Mar. 25-30	1		
Brazil:				
Bahia	July 1-31		1	
Para	Mar. 24-Apr. 6	2	1	Case Mar. 30 from Alagoas.
Pernambuco	Oct. 1-Mar. 15		732	
Rio de Janeiro	Nov. 26-Mar. 2	28	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 16	5		
Nelson	Dec. 24-30	1		
Vancouver	Apr. 14-20	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-Apr. 20	4		
Nova Scotia—				
Halifax	Mar. 24-Apr. 6	2		
Ontario—				
Hamilton	Apr. 14-27	16		
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Apr. 14	97	1	
Sarnia	Oct. 17-Mar. 23	43		
Toronto	Jan. 6-Mar. 24	3	1	
Windsor	Feb. 4-Mar. 16	8		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 10, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Quebec—				
Montreal	Dec. 17-Apr. 27	27		
Quebec	Dec. 10-Apr. 27	283	2	
Yukon—				
Dawson	Apr. 1-6	1		
Ceylon:				
Colombo	Nov. 12-Feb. 10	3		And vicinity.
Chile:				
Iquique	Dec. 10-Mar. 16	4	2	
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Mar. 9	68		
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chaochowfu	Mar. 30			Present.
Chenghai	Jan. 29-Mar. 30			Do.
Chungking	Nov. 18-Mar. 23			Do.
Dalny	Mar. 3-30	10	2	
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-Mar. 23	624	466	
Kityang	Jan. 21-Mar. 30			Do.
Nanking	Dec. 10-Mar. 30			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12-Mar. 23	48	13	
Egypt:				
Cairo	Dec. 10-Mar. 25	10	1	
Port Said	Jan. 30-Feb. 4	1		
France:				
Havre	Mar. 10-16		4	
Marseille	Jan. 1-Mar. 31		5	Nov. 1-30, 1 death.
Paris	Dec. 3-Apr. 6	118	2	
Germany				Total, Dec. 31-Apr. 20; cases, 117
Hamburg	Jan. 21-Apr. 13	4		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
Liverpool	Mar. 17-Apr. 17	2	1	Case Apr. 13, an American from the s. s. Arabic.
London	Jan. 14-Apr. 20	10	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-Mar. 9	2		
India:				
Bombay	Nov. 19-Mar. 23	637	216	
Calcutta	Nov. 19-Mar. 16		26	
Madras	Nov. 26-Mar. 30	179	71	
Rangoon	Oct. 1-Feb. 29	220	55	
Indo-China:				
Saigon	Nov. 13-Mar. 18	38	7	
Italy:				
Genoa	Dec. 1-Apr. 15	47	2	
Leghorn	Dec. 16-Apr. 13	101	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-Apr. 20	100	1	
Palermo	Nov. 26-Apr. 13	2,630	895	
Rome	Jan. 1-Mar. 31	31	3	
Turin	Jan. 15-Apr. 7	2		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Formosa	Mar. 3-16	3		
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	2	1	Jan. 20, 1 case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12-18	1		
Nogahama	Mar. 17-23	1		On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Malta	Dec. 24-Jan. 6	2	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 10, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Aguascalientes	Dec. 18–Mar. 3		7	
Chihuahua	Nov. 20–Feb. 11	92	36	
Coahuila, State	Oct. 1–30		16	
Guadalajara	Jan. 14–Apr. 13	8	4	
Juarez	Dec. 19–Apr. 27	16	5	
Magdalena	Dec. 23–Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18–24	1		
Mazatlan	Dec. 11–Mar. 19		11	Mar. 16, 25 cases in the lazaretto
Mexico	Nov. 26–Mar. 2	167	79	
Monterey	Dec. 11–24		2	
Porfirio Diaz	Dec. 3–Mar. 23		35	
Salina Cruz	Feb. 11–Mar. 9	4	2	Mar. 23, present in vicinity.
San Antonio	Jan. 1–21	12	9	
San Carlos	do.			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21–27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12–Feb. 24	6	2	
Tampico	Dec. 1–Mar. 30		15	
Tapachula	Nov. 1–Jan. 31		18	
Philippine Islands				Third quarter, 1911: Manila, cases; no deaths. Fourth quarter 1911: 38 cases.
Portugal:				
Lisbon	Dec. 9–Apr. 13	55		
Russia:				
Batum	Dec. 1–31	1		
Libau	Dec. 17–Apr. 14	2		
Moscow	Nov. 19–Mar. 23	52	8	
Odessa	Nov. 26–Apr. 6	34	1	
Reval	Nov. 1–30	1		
Riga	Dec. 24–Apr. 13	27		Oct. 1–Jan. 31; deaths, 10.
St. Petersburg	Nov. 19–Mar. 23	170	36	
Warsaw	Nov. 5–Feb. 24	390	185	
Siam:				
Bangkok	Nov. 5–Mar. 23		2,175	
Siberia:				
Omsk	Jan. 1–31	7		
South Africa:				
Durban	Jan. 21–Feb. 24	4		
Johannesburg	Jan. 7–Feb. 10	36		
Spain:				
Barcelona	Feb. 6–12		1	
Cadiz	Nov. 1–Mar. 31		29	
Madrid	Dec. 1–Mar. 31		16	
Malaga	Nov. 1–30		45	
Seville	Dec. 1–Mar. 31		10	
Valencia	Dec. 3–Apr. 13	371	16	
Straits Settlements:				
Penang	Feb. 11–17	1		
Singapore	Nov. 19–Mar. 16	36	13	
Switzerland:				
Cantons –				
Oberwalden	Jan. 14–20	1		
Zurich	Dec. 3–23	6		
Teneriffe:				
Santa Cruz	Dec. 3–Apr. 6		53	
Turkey in Asia:				
Beirut	Dec. 3–Mar. 30	1,475	107	
Turkey in Europe:				
Constantinople	Dec. 4–Apr. 14		162	
Uruguay:				
Montevideo	Sept. 1–Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1–Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28–Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Apr. 13	163,084	51									2	1	
Aden	Apr. 8	45,859	36	10				1						
Aguascalientes	Apr. 28	40,000	63	2					1			1	11	
Aix-la-Chapelle	Apr. 6	157,673	38	1								2		
Aleppo	Apr. 13	30,000				2								
Amsterdam	Apr. 20	582,586	133	19										1
Antwerp	Apr. 13	316,604	80	5								2	6	
Athens	Apr. 20	250,010	108	24									2	
Barcelona	..do	591,272		19				1		1		3		
Barmen	Apr. 6	170,700	21							1			1	
Batavia	Mar. 23	217,630						1						
Belfast	Apr. 20	385,492	172	32							2	1		4
Berlin	Apr. 13	2,080,127	539	91						2	8	13	6	3
Birmingham	Apr. 20	842,512	242									3		8
Bombay	Mar. 20	979,445	832	53	107			75					8	
Do	Apr. 6		893	55	119			59					9	
Bradford	Apr. 20	289,618	75	7						1			2	
Bremen	Apr. 13	246,850	61	6								4	2	
Budapest	Apr. 6	1,000,000									4	1	2	1
Cairo	Apr. 1	689,439	374	19				1	3	1			1	
Calcutta	Mar. 23	890,493	581		133	57		5						
Coburg	Apr. 13	24,174	8								1	1		
Cologne	..do	527,663	133	19							1	4		
Colombo	Mar. 23	227,026	126	18						6				
Do	Mar. 30		138	16						8				
Constantinople	Apr. 14	1,000,000	300	21				21		7	7	2	17	
Copenhagen	Apr. 6	465,000	142	27							1			2
Dalny	..do	45,539	21	1										
Dresden	..do	555,300	147	30								3		
Dundee	Apr. 20	171,006	58								1	3	4	2
Durban	Mar. 16	69,165	22									1		
Do	Mar. 23		12	1										
Edinburgh	Apr. 20	321,200	95	11								1	10	2
Erfurt	Apr. 6	126,133	27	1							1	4		
Do	Apr. 13		46	5							1	3		
Ghent	..do	165,325	64	9						1				1
Gibraltar	Apr. 21	25,367	5	1									1	
Glasgow	Apr. 26	785,600	263								2	3	11	5
Gothenburg	Apr. 20	170,100	51	8								1		1
Do	Apr. 13		52	15						1				
Guadalajara	Apr. 27	119,468	118									1		
Hamburg	Apr. 13	953,079	262	34							1	7		4
Hongkong	Mar. 16	336,488			9			27						
Do	Mar. 23				18			25		1		1		
Hull	Apr. 13	282,987											1	2
Do	Apr. 20										1			1
Iquique	Mar. 30	40,000	12	9						3				
Do	Apr. 6		11	7						4				
Karachi	..do	159,270	158		95									
Kharput	..do	21,000		1									1	
Kobe	Apr. 7	418,646	142								1	4		
Konigsberg	Apr. 13	252,200	91	17										1
Kulangsu	Mar. 20	8,000								1				
Leeds	Apr. 20	445,568	117							2			2	2
Leghorn	..do	104,000	34											
Leith	..do	81,000	36	4								1	5	1
Leipzig	Apr. 13	605,755	187	38										2
Libau	Apr. 14	84,000									2	1		
Do	Apr. 21										6	3		
Liege	Apr. 13	167,191	50	3									8	
Liverpool	Apr. 20	752,055	244	14							2	2	16	9
Lubec	..do	100,000	23	2							1			
Madras	Apr. 6	518,660	311			1		1		1			4	
Manaos	Apr. 13	52,000	56	7			3							
Mannheim	Apr. 6	201,201	44	5									1	
London	Apr. 20	7,340,119	1,800							1	6	12	33	61
Maracaibo	Apr. 19	50,000	7	1						1				
Matamoras	Apr. 28	15,000	6							1				

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Mexico	Mar. 9	719,052		22				9	10		2	2	6	
Do	Mar. 16		369	22				6	18			3		1
Do	Mar. 23		364	32				7	22		4	1	7	7
Montreal	May 4	466,197	177	24						3	2	1		7
Moscow	Mar. 30	1,500,000	814	120				1		2	15	9	5	12
Munich	Apr. 13	610,000	188	34						2	1	1		1
Nagoya	Mar. 30	424,655	162							1		1		
Nottingham	Apr. 13	260,000	75	6									5	3
Odessa	Apr. 6	575,000	197	41					4	2	1	1		
Do	Apr. 13		167	17					6		4	2		2
Ottawa	Apr. 20	90,000	28	1						1		1		
Do	Apr. 27		39	2								1		
Palermo	Apr. 20	340,000	136	9				1		2	1			
Para	Apr. 13	185,000	88	14				2						
Do	Apr. 20		89	11	2			1						
Paris	Apr. 13	2,888,110	1,034	291						3	5	9	43	7
Patras	Apr. 20	40,000	14	6						1				
Port of Spain	Apr. 6	60,000	38	5						2			1	
Prague	Apr. 13	225,877	90	28						1			3	
Rangoon	Mar. 30	293,316	176		10	3		12						
Rio de Janeiro	Mar. 23	921,987	364	77			1			1			1	8
Do	Mar. 30		347	66			1			1			4	3
Do	Apr. 6		378	65						3		1	3	5
Rotterdam	Apr. 20	438,777	122									1		
St. Petersburg	Apr. 6	907,708	819	130				4		11	18	13	27	8
Salina Cruz	Apr. 13	6,138								1				
Shanghai	Mar. 31	500,000	183	19							7	3	29	
Santa Cruz de Teneriffe	Apr. 13	46,000	12	2				1						
Stettin	do	240,000	84	9								2	1	
Do	Apr. 20		83	8							1	1	1	
Stockholm	Apr. 13	343,832	116	19							1		4	
Stoke-on-Trent	Apr. 20	237,153	66	4						1		1	3	1
Talcahuano	Mar. 30	28,000		3										1
Tientsin	Mar. 31	465,000	29	8							1			
Toronto	Apr. 13	392,000	162	5						1	7	1		3
Do	Apr. 20		138	15						1	3	4		2
Do	Apr. 27		132	11							3	4		2
Trieste	Apr. 13	235,999	95							1		1	2	2
Tripoli	Apr. 14	50,000	71	2						11				
Turin	Apr. 21	430,770	143	25						3			1	
Valencia	Apr. 20	235,000	109	9										
Vienna	Apr. 6	2,081,335	683	107						1	4	1	6	1
Winnipeg	Apr. 24	151,958	52	3							3	2	2	
Yokohama	Apr. 15	444,039								1				

MORTALITY—FOREIGN AND INSULAR COUNTRIES AND CITIES (Untabulated).

ALGERIA—*Oran.*—Month of March, 1912. Population, 123,086. Total number of deaths from all causes 191, including diphtheria 1, measles 12, scarlet fever 1, tuberculosis 22.

FRANCE—*Saint Etienne.*—Two weeks ended April 15, 1912. Population, 148,778. Total number of deaths from all causes 168, including diphtheria 4, scarlet fever 2, tuberculosis 32.

GERMANY—*Strassburg.*—Year ended December 31, 1911. Population, 180,193. Total number of deaths from all causes 2,981, including diphtheria 32, measles 51, scarlet fever 23, tuberculosis

446, typhoid fever 12. In the year 1910 the total number of deaths was 2,862. Population 179,552.

GREAT BRITAIN.—Week ended April 13, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 14 per 1,000 of the population, which is estimated at 17,639,830.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 21 per 1,000 of the population which is estimated at 1,157,014. The lowest rate was recorded at Ballymena, viz, 9.2 and the highest at Newry, viz, 30.5 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 16.6 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Falkirk, viz, 6.1, and the highest at Kilmarnock, viz, 27 per 1,000. The total number of deaths from all causes was 693, including diphtheria 9, measles 49, scarlet fever 3, typhoid fever 2.

GUAM.—Month of February, 1912. Population, 9,000. Total number of deaths from all causes 25, including tuberculosis 4. One hundred and fifty-six cases of hookworm disease, and 1 death from tetanus, were reported.

HAWAII—*Hilo.*—Three weeks ended April 13, 1912. Population, 3,500. The deaths include tuberculosis 3. A case of typhoid fever was reported.

Honolulu.—Three weeks ended April 13, 1912. Population, 39,306. Total number of deaths from all causes 62, including tuberculosis 13. Two cases of diphtheria and 2 of typhoid fever were reported.

ISLE OF PINES—*Nueva Gerona.*—Ten days ended March 31, 1912. Population, 4,515. One death, from typhoid fever, was reported.

ITALY—*Genoa.*—Two weeks ended April 15, 1912. Population, 272,077. Total number of deaths from all causes 170, including diphtheria 3, measles 1, tuberculosis 24.

PORTO RICO—*Ponce.*—Month of April, 1912. Population, 27,952. The deaths include tuberculosis 8; 109 cases of hookworm disease with 3 deaths, 4 cases of malaria with 4 deaths, 1 case of leprosy, and 1 case of tetanus with 1 death, were reported.

San Juan.—Two weeks ended April 27, 1912. Population, 32,048. The deaths include diphtheria 1. Eighteen cases of tuberculosis and 1 case of typhoid fever were reported.

RUSSIA—*Riga.*—Month of December, 1911. Population, 385,000. Total number of deaths from all causes 646, including diphtheria 9, scarlet fever 23, smallpox 2, typhoid fever 2.

Month of January, 1912. Population, 385,000. Total number of deaths from all causes 613, including diphtheria 6, measles 3, scarlet fever 15, smallpox 6, typhoid fever 2.

Siam—*Bangkok.*—Four weeks ended March 23, 1912. Population, 600,000. The deaths include cholera 271, plague 2, smallpox 280.

Turks Islands.—Two weeks ended April 30, 1912. Population, 1,675. Total number of deaths from all causes 2. No deaths from contagious diseases.

Uruguay—*Montevideo.*—Month of February, 1912. Population, 321,224. Total number of deaths from all causes 516, including diphtheria 2, measles 1, scarlet fever 1, tuberculosis 80, typhoid fever 11.

Venezuela—*La Guaira.*—Two weeks ended April 15, 1912. Population, 10,000. Total number of deaths from all causes 26, including tuberculosis 3, typhoid fever 1.

By authority of the Secretary of the Treasury:

Rupert Blue,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS

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EXAMINATION OF EXCRETA FOR TYPHOID BACILLI.

By L. L. LUMSDEN and A. M. STIMSON, Passed Assistant Surgeons, Public Health and Marine-Hospital Service.

It is now well known that some persons recovered from typhoid fever continue to discharge typhoid bacilli in their urine or feces, or both, for weeks, months, or even years. Numerous outbreaks of typhoid fever in recent years have been definitely attributed to infection derived from typhoid bacillus carriers. The importance of keeping under observation persons recovering or recovered from clinical typhoid fever until their excreta have been examined bacteriologically with negative results is obvious. As there may be some intermittency in the discharge of typhoid bacilli in the excreta at least two specimens, and preferably four specimens, of the excreta collected on occasions several days or a week apart should be examined and found negative for typhoid bacilli before the convalescent is discharged from observation.

Numerous methods for the isolation of typhoid bacilli from excreta are in use. None can be regarded as perfect. Believing that it will be of interest to health officers, hospital authorities, and others having charge of typhoid convalescents, the following description of the technique now employed as a routine at the Hygienic Laboratory is presented:

METHOD OF EXAMINING FECES FOR TYPHOID BACILLI.

Place about 5 grams of the feces in a conical glass or other suitable vessel, add 15 or 20 cubic centimeters of sterile physiological salt solution or bouillon and agitate. Let stand one-half to one hour either at room temperature or, preferably, at incubator temperature (37° C.) in order to permit the heavy particles to settle. Deposit one or two drops of the supernatant fluid in the center of an Endo plate. With a right-angled glass rod distribute the drop over the entire surface of the plate and then rub the rod over the surface of a second, third, fourth, and fifth Endo plate. By carrying the spreader over the surfaces of several plates in this way, one or two of the plates will furnish abundant but sufficiently isolated colonies to permit "fishing."

After inoculation place the plates inverted in the incubator, leave there for 20 to 24 hours, and then examine. On the plates colonies of typhoid and paratyphoid bacilli will be transparent, colorless, dewdrop-like and usually from 1 to 2 millimeters in diameter; while colonies of colon bacilli will be deep red, showing sometimes on the surface a sheen from precipitation of the fuchsin, and measure usually from 3 to 4 millimeters in diameter. If typhoid-like colonies appear on the plates fish 5 or 6 of them, and inoculate tubes of Russell's medium in the following manner:

Touch the colony with a sterilized platinum needle, make two streaks along the slanted surface of the medium in the tube and then stab the needle down through the center of the block of medium to the bottom of the tube. Incubate the inoculated tubes of Russell's medium for 20 to 24 hours and then examine.

On Russell's medium inoculated in this way typhoid bacilli leave the surface of the medium blue but change the medium in the butt of the tube to a bright red; colon bacilli redden both the surface and the depths of the medium and cause the formation of gas bubbles throughout the depths of the medium; paratyphoid bacilli leave the surface blue, but produce redness and gas bubbles in the butt of the tube; dysentery bacilli leave the surface blue and change the medium in the butt of the tube to claret color quite readily distinguishable from the brighter and more pronounced redness produced by typhoid bacilli.

If any of the tubes of Russell's medium inoculated with suspected colonies from Endo plates show a typhoid-like growth, suspend some of the surface growth in physiological salt solution and test with typhoid agglutinative serum of a known titre for stock cultures of typhoid bacilli. Since typhoid bacilli just isolated from excreta may not agglutinate in as high dilutions of agglutinative serum as will stock cultures,[1] the test for agglutination should be made with several comparatively low dilutions of serum before deciding that it is negative. If the culture responds positively to the agglutination test, plate out some of the growth from the tube of Russell's medium, in order to obtain the organism in pure culture and then carry the organism through the various cultural and other tests required to establish positively its identity. If the colonies on Endo medium and the growth on Russell's medium suggest paratyphoid, the growth should be tested with paratyphoid agglutinative serum.

METHOD OF EXAMINING URINE FOR TYPHOID BACILLI.

Deposit 3 drops of the urine on an Endo plate spread with a right-angled glass rod; then rub the rod over the surface of a second and third Endo plate. For the remaining steps in the examination proceed as described above for the examination of feces.

DIRECTIONS FOR MAKING ENDO PLATES.[2]

Make stock agar of the following formula:

Water	cubic centimeters..	1,000
Agar, powdered	grams..	40
Sodium chloride	do....	5
Liebig's extract of meat	do....	10
Peptone, Witte's	do....	10

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[1] Sawyer, A. W., Journal American Med. Assn., Vol. LVIII, No. 18, May 4, 1912, p. 1336.

[2] Endo, S.: Cent. f. Bakt., vol. 35, No. 1, 1903-4, p. 109. Klinger: Arb. a. d. Kais. Ges-Amt., 1906, p. 821 (see also Herford). Willson: Journ. Hyg., 1905, p. 429. Claudits: Hyg. Rundsch., 1904, vol. 14, p. 718. Herford: Arb. a. d. Kais. Ges-Amt., 1906, p. 62. Kayser: Munch. Med. Woch., 1906, p. 823. Kendall: Journ. Med. Research, 1911, vol. 25, No. 1, p. 95.

Cook in Arnold sterilizer for three hours. Clear by vacuum filtration or by cooling in a smooth cylindrical or conical container, turning out the solid agar, and cutting off the part containing sediment. It is sometimes necessary to repeat the clearing process.

Neutralize to litmus paper with sodium carbonate solution. Add 3.7 cubic centimeters sterile 10 per cent anhydrous sodium carbonate (Na_2CO_3) solution. Put up the medium in quantities of 100 cubic centimeters and 200 cubic centimeters in flasks having a capacity of at least 150 cubic centimeters and 250 cubic centimeters, respectively. Plug mouths of flasks with cotton, tie paper caps over mouths of flasks to prevent evaporation, sterilize and keep these flasks of medium in stock ready for use.

The remaining steps in the making of the plates should be postponed until a specimen is to be examined. One hundred cubic centimeters of the medium will make about 5 plates. If 10 or 12 plates are desired for use, proceed as follows: Place one of the flasks containing 200 cubic centimeters of the medium in the Arnold sterilizer and let boil until the medium is completely melted. This usually takes about 1 hour. Add 2 grams of powdered lactose (C. P.) to 20 cubic centimeters of water in a test tube and dissolve by boiling in sterilizer for about 15 minutes. To 10 cubic centimeters of water in another test tube add 0.25 gram of anhydrous sodium sulphite (C. P.), and 0.7 cubic centimeter of a saturated solution of basic fuchsin in 95 per cent alcohol[1] and heat in Arnold sterilizer for about 15 minutes. Add to the flask of melted agar the lactose solution and the sodium sulphite fuchsin solution. Gently agitate the flask to secure thorough mixing of the contents and heat in the sterilizer for about 5 minutes. Pour the medium into the plates while it is steaming hot. Leave the Petri dishes in the incubator with covers off for about one-half hour to get rid of surface moisture.

The plates, after hardening, should be nearly colorless to transmitted light, and rose or flesh colored to reflected light. In a cold, dark place they will keep for several days.

DIRECTIONS FOR MAKING RUSSELL'S MEDIUM.[2]

Add to 2 per cent nutrient agar, such as is used for routine bacteriological culturing, enough of a 5 per cent aqueous solution of litmus to give the medium a distinct purple-violet color. Adjust the reaction of the medium by adding normal sodium hydrate solution until the mixture is neutral to litmus. Add 1 per cent of lactose and one-tenth of 1 per cent of glucose dissolved in a small amount of hot water and tube the medium for slants. Place tubes loosely in sterilizer basket and cook in the Arnold sterilizer for 10 minutes on the first day and for 15 minutes on the second day. The heating of the medium must not be carried too far, on account of the danger of breaking down the lactose. After the final sterilization, slant the tubes until the medium has become solid and store in a dark, cool place, such as ice chest or laboratory cold room.

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[1] The saturated solution of fuchsin (about 4 per cent) may be kept in tightly stoppered bottles as a stock solution, but should be filtered immediately before use.

[2] Russell, F. F., Jour. Medical Research, Vol. XXV, 1911, p. 217.

SANITARY ADVICE FOR SUMMER TOURISTS.

By W. C. Rucker, Assistant Surgeon General, Public Health and Marine-Hospital Service.

With the advent of warm weather and the consequent closing of schools comes the thought of leaving the city for the cool country. The tired teacher and the over-worked clerk, the restive school boy, anxious to leave his books for the great out of doors, the society matron, bored by the constant round of social duties, all long to get away from the city and to spend the summer in some shady rural retreat. Too frequently the realization of this happy anticipation is a hasty return to the city and a long stay in the hospital, to be followed, perhaps, by the death of some loved one. Much of this may be avoided if reasonable care is exercised in the choice of the place to spend the summer.

Ordinarily the questions which are asked when one is seeking for such a place include the character of the food and beds, the extent and nature of the social life, the temperature of the air, and the opportunities for bathing. All of these are important, but they are of secondary consideration as compared with the question of the healthfulness of the locality in which it is intended to spend the warm months. Therefore, in choosing a summer residence the first thing to have in mind is the sanitary environment in which this time is to be spent.

Every autumn there is a rise in the number of typhoid cases in the cities, and when this is investigated it is frequently found that they are simply cases which have been imported from the country. Persons have left the city in search of health, and, as they are accustomed to think that health may be obtained and maintained best in the country, they accept it without question as the place to get health.

Typhoid fever is a disease which summer tourists frequently contract; therefore it is always well to bear the avoidance of this disease in mind in choosing a summer residence. Typhoid fever is a disease of man. The germ which causes it leaves the body of the person sick with the disease in his discharges, and when these are taken by a well person a secondary case of the disease is caused. The germs of typhoid fever are carried from the sick to the well in water and food and by flies and the fingers. If one does not take into his system the discharges of another person having typhoid fever he does not get typhoid fever. At the present time typhoid fever is essentially a disease of the country, because in the country the opportunities for the transference of the germs of the disease from the sick to the well are greater than they are in the city. Therefore in the choice of a place to spend the summer one should inquire into the occurrence of typhoid fever in the community in which it is intended to stay, and one should determine the opportunities which exist there for the carrying of the germs of typhoid fever from the sick to the well visitor.

Since the germ is carried in the discharges of persons sick with typhoid fever, a careful inspection should be made of the facilities for disposing of human excrement. A place which has a surface privy to which the domestic animals and fowls have free access should not be chosen. Places which have a pit privy or a cesspool situated only a short distance from a well should be avoided. Places which take their drinking water from streams which receive the drainage of outhouses or from buildings should likewise be regarded with suspicion. Other things being equal, places having a water supply from artesian or deep-driven wells should be given the preference. Unscreened toilets, because of the flies which they breed, and because of the chance which these insects have to pick up the germs of typhoid fever therein and carry them to the boarder's food, are particularly dangerous. It is equally important, both for the comfort and the health of the guest, that the house also be screened.

It has been shown in the foregoing paragraphs how the fly may carry the germs of typhoid fever from the toilet to the kitchen and there infect the food which people eat. There is another way in which it may infect food, and this is particularly important from the standpoint of the child. The source of the milk supply should always be investigated in choosing a place of summer residence, and if it is found, as is too frequently the case, to be from dirty, fly-infested stables, in which dirty cows are milked by dirty hands, it is best to give the place a wide berth.

Another insect to be avoided is the mosquito. It used to be thought that malaria was caused by night air, but nowadays it is known that the only bad thing about night air is the mosquito which it contains. This insect infects people with malaria by biting them and injecting the germ as it bites. Therefore when a place of summer residence is chosen it should not be an unscreened house, nor should it be in a swampy region, nor in a locality in which there are small pools of water well adapted to the breeding of mosquitoes.

Finally, if there is any doubt in the mind of the summer tourist let him consult the local health officer of the locality under consideration.

REPORT ON AN OUTBREAK OF TYPHOID FEVER AT LINCOLN, NEBR., IN 1911.

By L. L. Lumsden, Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

On the request of the governor of Nebraska the writer was detailed by the Surgeon General of the Public Health and Marine-Hospital Service to proceed to Lincoln, Nebr., and to make an investigation of an outbreak of typhoid fever in that city, with a view to determining the sources of the infection and the measures necessary for the control of the disease.

The investigation was begun on November 4 and terminated on November 17, 1911. It comprised an epidemiological study of cases reported from July 1 to November 1, a sanitary survey of the city and its immediate environs, bacteriological examinations of the water supply, and inspections of dairies and other places where foods were sold or prepared for sale.

In conducting the investigation the writer had the active cooperation of Dr. H. W. Waite, professor of bacteriology and pathology in the University of Nebraska, who was engaged by the city council to assist in the investigation; the city health officer; the city engineer; and the water commissioner. The bacteriological examinations were made in the bacteriological laboratory of the University of Nebraska. The media used in the examination of the water supply were prepared with especial care by Mr. John J. Putnam, technical assistant in the laboratory.

TIME OF OCCURRENCE AND EXTENT OF OUTBREAK.

In the four months, July, August, September, and October, 1911, 161 cases were reported in the city. Of these 141 were investigated. No definite information was obtainable in about 20 of the reported cases, but during the course of the investigation of the reported cases 9 others were learned of and investigated, making a total of 150 cases investigated. Of these 150 cases 6 were in persons who had become infected while away from Lincoln, leaving 144 for detailed consideration.

The occurrence of the cases, according to dates of definite onset of symptoms, is shown in the following table:

Dates of onset of symptoms.

Day of month.	June.	July.	August.	September.	October.
1		1	1	3	1
2				1	
3				3	
4		1	3	4	
5				1	
6				1	
7		1			
8					1
9		1	2		
10			3	1	
11			3	3	
12			3		1
13					
14			4	1	
15		1	8	2	
16		1	3		
17		1	3		
18		1	3		
19			4	1	1
20		2	6		
21			2	2	
22			3		
23			6	1	1
24			9		
25		1	7		
26		1	4	2	
27			3		
28	1		6		1
29		1	6	1	1
30		2			
31		1	1		
Total	1	16	93	27	7

CHART. I

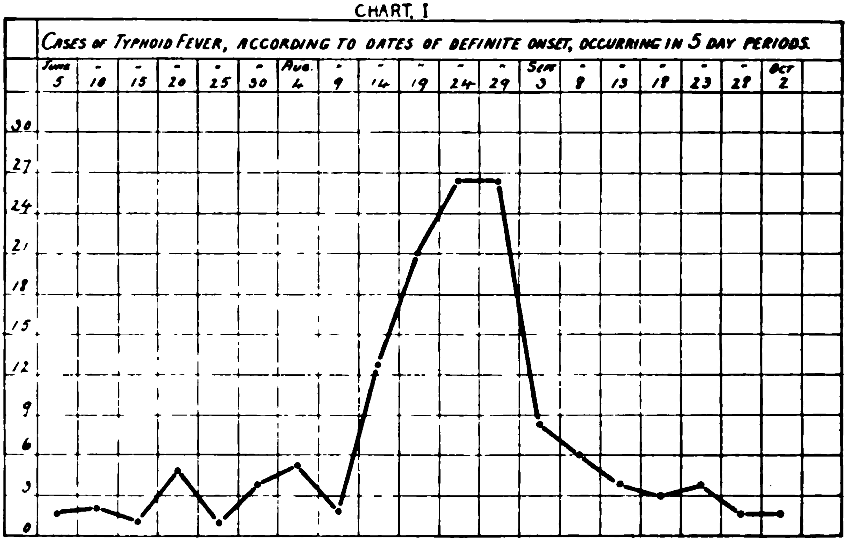

Chart 1 shows the chronological progress of the disease according to occurrence of cases in five-day periods. The curve shows a sharp rise for August. Prior to July, 1911, reporting of cases of typhoid fever in Lincoln was not required, and consequently a comparison of the number of cases reported in 1911 with the numbers for previous years can not be given.

On the evening of November 6 a public meeting was held under the auspices of the city council for the puprose of discussing the typhoid-fever situation. Some of the physicians present expressed the opinion that typhoid had been no more prevalent in the city during the summer of 1911 than in the several previous summers. Others were of the contrary opinion.

There was an agreement among the majority of the physicians and others at the meeting that the disease had been unusually prevalent in the northeast section of the city during the summer of 1911.

The following table gives the number of deaths from typhoid fever, by months, recorded at the city health office from January 1, 1890, to November 1, 1911:

Reported deaths from typhoid fever, by months, from Jan. 1, 1890, to Nov. 1, 1911.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1890	1	......	......	4	1	......	......	1	3	4	6	3	23
1891	1	......	......	3	2	......	1	......	1	2	2	3	15
1892	......	......	1	......	1	1	......	1	3	2	7	4	20
1893	2	2	......	......	1	2	......	3	2	7	4	4	27
1894	1	1	......	......	1	1	2	2	3	1	3	......	15
1895	1	1	2	......	......	......	......	3	3	7	2	......	19
1896	......	......	1	1	1	1	......	1	1	2	1	3	12
1897	......	......	......	......	2	1	1	2	2	......	1	1	10
1898	......	1	1	1	......	1	2	......	4	2	1	......	13
1899	1	......	1	......	......	......	......	2	1	3	1	2	11
1900	......	......	......	1	1	......	......	......	2	......	......	......	4
1901	1	1	......	......	......	2	1	1	4	2	2	......	14
1902	......	1	......	1	......	......	......	5	2	4	......	2	15
1903	......	......	......	......	......	1	1	1	2	......	2	......	7
1904	1	......	......	......	......	......	......	......	2	1	5	......	9
1905	......	......	......	......	......	......	......	1	5	2	1	......	9
1906	......	......	......	1	1	1	......	......	3	......	......	3	9
1907	1	......	......	......	......	1	......	4	4	1	1	1	13
1908	1	......	......	......	......	1	1	1	1	......	......	......	5
1909	......	......	2	......	......	......	......	1	......	......	1	......	4
1910	......	......	......	......	......	......	......	2	3	1	1	1	8
1911	......	1	......	......	......	1	......	2	4	1	......	......	9

Judging by the face of the death returns, the disease for the city as a whole did not seem to be much, if any, more prevalent in the summer of 1911 than it had been in that season of a number of previous years. Thus, at the outset there seemed to be some uncertainty as to whether there had been in the summer of 1911 an unusual prevalence or an outbreak of the disease.

GEOGRAPHICAL DISTRIBUTION.

Upon investigating the cases it was determined that the disease had been much more prevalent in the section of the city north of J Street and east of Fourteenth Street than in other sections of the city. That section contains about one-fourth of the city's population and furnished about 84 per cent of all the cases reported and investigated which occurred in July, August, September, and October, 1911. Of the 23 cases occurring in persons who lived outside the especially affected section, 11 were in persons who, during the 30 days prior to illness, had gone into the affected section from time to time and drunk water from the taps while there. In the especially affected section the general sanitary conditions were better than those for some of the other sections of the city and somewhat better than those for the average section of the city.

AGE DISTRIBUTION.

The persons affected were according to age and sex as follows:

Age and sex of patient.

Age in years.	Male.	Female.	Total.
0 to 4			
5 to 9	9	9	18
10 to 14	4	5	9
15 to 19	15	14	29
20 to 24	16	16	32
25 to 29	8	11	19
30 to 34	8	6	14
35 to 39	6	1	7
40 to 44	3	4	7
45 to 49		3	3
50 to 54	1	2	3
55 to 59	1	1	2
60 to 64			
65 to 69	1		1
Total	72	72	144

The disease appeared to be distributed generally throughout the population in the affected section without any strikingly disproportionate number of cases in either one of the sexes or in any particular age groups. The age distribution was not suggestive of a milk outbreak.

POSSIBLE SOURCES OF THE INFECTION RESPONSIBLE FOR THE OUTBREAK.

The season of occurrence of the outbreak suggested the possibility of flies, personal contact, milk, ice cream, green vegetables, fruits, and other foods having been important factors in the spread of the infection. The epidemiological evidence collected strongly suggested that some of these were operative to some extent, but pointed beyond reasonable doubt to the conclusion that some factor other than these had been predominant in the distribution of the infection.

Flies were no more abundant and their chances to spread infection from human excreta to foods appeared to be no greater in the section especially affected than in other sections of the city. Eight per cent of the cases investigated were reasonably attributable to infection through contact with previous cases, but the hypothesis that personal contact was the predominant factor would not be reconcilable with the geographical distribution of the disease.

There was no disproportionately large number of cases among the customers of any of the dairymen, the number of cases along the different milk routes in the affected section being roughly proportionate to the amount of milk distributed. The larger milk dealers among whose customers any considerable number of cases occurred distributed milk also in sections of the city in which the disease was not unusually prevalent. By similar tokens ice cream, vegetables, fruits, and baking products were eliminated as predominant factors. It was suggested by some of the citizens that many of the cases had been caused by infection contracted at camp-meeting grounds and summer resorts outside but near the city, but the investigation determined that about 50 per cent of the cases were in persons who during the 30 days immediately before onset of illness had not been to such places nor elsewhere outside the city limits.

WATER.

The epidemiological data pointed definitely to the city water supply as the principal source of the infection responsible for the outbreak.

There are some private wells in use, but the vast bulk of the water used in the city is obtained from the public supply. The sources of water used for drinking during the 30 days prior to illness by the persons affected are given in the following table:

Source of drinking water of patients during 30 days prior to illness.

Water used for drinking.	Number of cases developing in—			
	July.	August.	September.	October.
Raw city:				
Solely	8	70	19	2
Principally	5	19	4	4
Occasionally	3	3	4	1
Total	16	92	27	7
Boiled city:				
Solely				
Principally		1		1
Occasionally				
Total		1		1
Private wells:				
Solely				
Principally	3	3	4	
Occasionally		8	3	1
Total	3	11	7	1
Out of town:				
Solely				
Principally				
Occasionally	6	12	3	3
Total	6	12	3	3
Total cases investigated	16	93	27	7

The public water supply was obtained from three artesian wells, known as the A Street well, the F Street well, and the Rice well. These wells furnished about 3,274,000 gallons of water per day. The largest source of supply was the A Street well, which furnished about 100,000 gallons per hour. The F Street well furnished about 33,000 gallons per hour, and the Rice well about 30,000 gallons per hour.

During the spring and summer of 1911 the pump at the Rice well was run on an average of about 20 hours per day, that at the F Street well about 6 or 8 hours per day, and that at the A Street well 24 hours per day. When the F Street and the Rice well pumps were not running, the mains in the sections receiving water from these two wells would be supplied entirely with water from the A Street well. Thus the water from the A Street well was distributed over the entire city, but the distribution of water from the Rice well was largely confined to the section of the city north of J Street and east of Fourteenth Street, and the distribution from the F Street well was largely confined to the section north of J Street and west of Fourteenth Street. The distribution of the typhoid outbreak corresponded very strikingly with the distribution of water from the Rice well. This fact, along with the evidence obtained by the epidemiological investigation of cases, pointed strongly to the Rice well as the source of infection.

Bacteriological examinations were made of samples of water from each of the three wells and from taps and fire hydrants in different parts of the city. The results of the examinations are presented in the following table:

Results of examinations of city water.

Source.	Date of examination.	Number of bacteria per c. c., as determined by colonies on agar plates after 48 hours' incubation at 37° C.	Gas in lactose bouillon from—		B. coli in—	
			1 c. c.	10 c. c.	1 c. c.	10 c. c.
Rice well:						
Sample No.—						
1	Nov. 6	1	–	–	–	–
2	Nov. 7	1	–	–	–	–
3	Nov. 8	33	–	–	–	–
4	Nov. 9	3	–	–	–	–
5	Nov. 10	0	–	–	–	–
6	Nov. 11	0	–	–	–	–
7	Nov. 13	1	–	–	–	–
Average		5				
Percentage positive			0	0	0	0
F Street well:						
Sample No.—						
1	Nov. 8	2	–	–	–	–
2	Nov. 9	0	–	–	–	–
3	Nov. 10	0	–	–	–	–
4	Nov. 11	1	–	–	–	–
Average		0.7				
Percentage positive			0	0	0	0
A Street well:						
Sample No.—						
1	Nov. 9	0	–	–	–	–
2	Nov. 10	5	–	+	–	+
3	Nov. 11	6	–	+	–	+
4	Nov. 13	4	–	–	–	–
5	Nov. 14	8	–	+	–	+
6	do	3	–	–	–	–
Average		4				
Percentage positive			0	50	0	50
House tap at—						
2332 N Street [1]	Nov. 6	2	–	–	–	–
2332 N Street [2]	do	0	–	–	–	–
2400 N Street [1]	do		–	–	–	–
2400 N Street [2]	do		–	–	–	–
2314 Randolph Street	do		–	+	–	+
2540 Randolph Street	do		–	+	–	+
744 South Twenty-eighth Street	do		–	+	–	+
305 South Twenty-seventh Street	do		+	+	+	+
338 South Twenty-seventh Street	do		–	+	–	+
2138 G Street	do		–	+	–	+
2725 Randolph Street	do		+	+	+	+
Fourteenth and G Streets	Nov. 7	4	–	+	–	+
2228 Q Street	do	2	–	–	–	–
1645 G Street	do		–	+	–	+
2032 N Street	do		–	+	–	+
307 South Fourteenth Street	do		–	–	–	–
1802 N Street	do		–	–	–	–
2232 O Street	do		–	–	–	–
2541 N Street	do		–	–	–	–
2636 Q Street	do		–	+	–	+
2524 O Street	do		–	–	–	–

[1] Sample taken after pump at Rice well had been stopped for several hours.
[2] Sample taken a few minutes after starting pump at Rice well.

Results of examinations of city water—Continued.

Source.	Date of examination.	Number of bacteria per c. c., as determined by colonies on agar plates after 48 hours' incubation at 37° C.	Gas in lactose bouillon from—		B. coli in—	
			1 c. c.	10 c. c.	1 c. c.	10 c. c.
House tap at—Continued.						
2400 N Street	Nov. 7		−	−	−	−
2330 P Street	do		−	−	−	−
Fourteenth and K Streets	do		−	−	−	−
330 North Fourteenth Street	do		−	+	−	+
2127 N Street	do		−	−	−	−
1400 O Street	do		−	−	−	−
2208 P Street	do		−	−	−	−
2322 N Street	do		−	−	−	−
1624 Vine Street	Nov. 8		−	−	−	−
2213 Vine Street	do	520	−	+	−	−
1903 Vine Street	do		+	+	+	+
512 North Twenty-sixth Street	do		−	+	−	−
633 North Twenty-sixth Street	do		−	−	−	−
2420 Vine Street	do		+	+	+	+
333 North Twenty-fourth Street	do		−	−	−	−
226 North Twenty-fourth Street	do		−	−	−	−
816 H Street	Nov. 10		−	+	−	+
628 South Twelfth Street	do		−	−	−	−
615 G Street	do		−	−	−	−
1204 G Street	do	1	−	−	−	−
1144 E Street	do		−	+	−	+
2741 Randolph Street	Nov. 11	1	−	+	−	+
2703 Randolph Street	do	3	−	−	−	−
2534 Randolph Street	do	0	−	−	−	−
State University	Nov. 12		−	+	−	+
Do	do		−	−	−	−
821 South Fourteenth Street	Nov. 13	2	−	+	−	+
1900 J Street	do		−	−	−	−
1441 Rose Street	do	2	−	−	−	−
1620 South Twenty-third Street	do	2	−	−	−	−
930 South Fourteenth Street	do	3	−	+	−	+
728 South Fourteenth Street	do	1	−	+	−	+
148 South Twenty-seventh Street	do		−	−	−	−
1444 A Street	do	2	−	+	−	+
2540 Randolph Street	do	4	−	−	−	−
2120 Sumner Street	do	4	−	−	−	−
325 South Twenty-seventh Street	do	2	−	−	−	−
1429 South Fourteenth Street	do		−	−	−	−
1927 J Street	do	1	−	−	−	−
State University	do	2	−	−	−	−
1920 J Street	Nov. 14	1	−	+	−	+
1936 J Street	do	2	−	−	−	−
State University	do	1	−	−	−	−
Do	Nov. 15	4	−	+	−	......
Average		21				
Percentage, positive			6	40	6	35
Fire hydrant at—						
Ninth and H Streets	Nov. 9		−	−	−	−
Twenty-fourth and J Streets	do		−	−	−	−
Thirtieth and Potter Streets	do		+	+	+	+
Eleventh and K Streets	do		+	−	+	......
Eleventh and A Streets	do		−	+	−	+
Thirtieth and Oak Streets	do		+	+	+	+
Twenty-fifth and L Streets	do		−	+	−	+
Twenty-second and W Streets	do		+	+	+	+
Seventeenth and C Streets	do		−	+	−	+
Twenty-second and Q Streets	do		−	−	−	−
Twenty-second and T Streets	do		+	+	+	+
Twenty-third and F Streets	do		+	+	+	+
Twenty-second and Dudley Streets	do		+	+	+	+
Positive, percentage			46	69	46	75

The examinations of the water from the Rice well and the F Street well gave no evidence whatever of contamination of these two sources. The examinations of the water from the A Street well and from the taps and hydrants, however, gave evidence of contamination. The colon bacillus content of the water from the A Street well and the taps when considered along with the low total bacterial content strongly suggested pollution with sewage.

The fact that gas-forming organisms were more abundant in the samples of water collected from the fire hydrants than in those from the taps probably was due largely to the leaky condition of the fire hydrants distal to the valves, permitting dirt to enter the hydrants and to be washed through when the water was turned on.

Extreme care was exercised in collecting the samples to preclude the likelihood of accidental contamination. The mouths of the taps and hydrants were flamed with an alcohol lamp and the water was permitted to run for 5 to 10 minutes before the samples were taken.

The results of the examinations of the water from the Rice and the F Street wells were in accord with those obtained by Dr. Waite in his examinations of five samples of water from the Rice well and three from the F Street well during the month immediately preceding the beginning of the investigations by the writer.

Contamination of the A Street well could not have been responsible for the typhoid outbreak, as was shown by the lack of relation between the distribution of the water from that well and the distribution of the disease.

Water of the character which was shown consistently during the period of the investigation by that of the Rice well could not be reasonably implicated as an important source of typhoid infection. Therefore it appeared certain that if contamination of the Rice well had been responsible for the typhoid outbreak such contamination had ceased to occur before the beginning of the investigation.

Consideration was given to the possibility of the outbreak having been caused by contamination of the water in the city mains after the water had left the wells. In a number of places water mains and sewers were close together. In one or two places where the water main and sewer lay close together slight leaks in both water main and sewer had been found. Some of the citizens stated that at times during the month prior to the outbreak there had been practically no pressure in the taps in the basements of houses in the affected section, but both the city engineer and city water commissioner stated that in their opinion the pressure in the mains in no section of the city had been so low that there would have been a likelihood of seepage into the mains through leaks in the pipes.

A water main was found to pass through a sewer well at Nineteenth and J Streets. Sewage flowed over this water main. There was a slight leak in the joint of the main which was fixed in the cement on the edge of the semicylindrical sewer. When the sewage rose in the well, as it was liable to do in times of heavy rains, there was certainly a chance for sewage to enter the water main at this point, provided the pressure within the main was not greater than that outside the main.

Samples of water for bacteriological examination were taken from many different taps with a view particularly to determining at what points, if any, there was pollution of the water as it coursed through the mains, but with negative results. All evidence of contamination found in the water taken from the taps could be attributed, for the most part certainly, to the contamination of the water of the A Street well. Therefore it appeared that if contamination of the water as it coursed through the mains had been responsible for the typhoid outbreak such contamination had ceased to occur.

According to all information obtained from the city officials there had been done since the period of causation of the outbreak no work on the wells, water mains, or sewers which could have been reasonably expected to have changed the situation.

All three of the wells which were in use are of the same general type. The Rice well has been in use for over 20 years. It is about 60 feet in depth and about 24 feet in diameter. Sunk from the bottom of the well are several iron pipes which bring the artesian water from the water bearing stratum about 100 feet below the bottom of the well proper and about 160 feet below the surface of the ground immediately around the well. The wall of the well is made of brick and concrete. The wall was found to be cracked in places and the staining of the wall about some of these cracks gave evidence that at times there had been seepage of surface or "ground" water into the well. There were observed a number of old pipes passing through the wall within a distance of 15 or 20 feet below the ground surface, which had been used as drains, blow-offs, etc., when the old steam pump, some of the machinery of which is still in the well, was in operation.

The writer was informed by the city water commissioner that all of these old pipes had been securely stopped up when, some years before, the pumping machinery located in a pit about 50 feet southeast of the well had been installed, and that there was no chance for anything to enter the well through any of these old pipes. On the frequent inspections of the well by the writer these pipes were closely scrutinized, but at no time was any one of them found to be discharging into the well. Furthermore, had there been at that time any considerable drainage into the well through either the old pipes or cracks in the wall it would have been evidenced in the results of the bacteriological examination of the water. A sewer passed within about 37 feet of the well and there were a number of grossly insanitary surface privies within a few hundred feet of the well, so that pollution of the ground water in the immediate vicinity of the well was certain.

The bulk of evidence pointed to the Rice well as the source of infection which had caused the typhoid outbreak, but the findings in the investigation did not justify a dogmatic conclusion that the Rice well had been the source of the infection. It was conceivable that during the period of causation of the outbreak the soil about the well lacked its usual filtering, or some other qualities, to prevent contaminating matter in the surroundings of the well from entering the well. The relation of the period of causation of the outbreak to rainfall was noted. Judging by the dates of onset of cases the period of causation of the outbreak proper began about August 1 and terminated about August 20. May, June, and July were unusually dry months. Toward the end of the long dry spell, it was said, the ground in the vicinity was generally fissured, some of the fissures being observed to extend to a depth of 4 or 5 feet below the surface. On August 2, 3, and 4 light rains occurred, but they were said not to have been sufficient to have had much apparent effect in changing the very dry condition of the soil. On August 17 there was quite a heavy rain, the first for several months, the fall amounting to 2.31 inches. Through the remainder of August and through September the rainfall was somewhat in excess of the normal. Thus the time of the first heavy rain after the long drought about corresponded with the end of the period of causation of the typhoid outbreak.

At the A Street well the water as it came up into the well proper through the pipes from the deep water-bearing stratum was found to be free from contamination, but some of the samples of water as it was pumped from the well and reservoir showed the presence of colon bacilli. It appeared, therefore, that the contamination of the water of the A Street well was taking place in the well and not in the deep water-bearing stratum. A small stream of water was found trickling through a crack in the wall of the well about 20 feet below the ground level. Examination of the water trickling through the leak showed it to be highly polluted, colon bacilli being found in 0.1 cubic centimeter. Furthermore, there was some chance for contamination of the A Street well water to occur from dust and surface drainage finding their way through the poorly fitting covers to the manholes leading to the underground reservoirs into which the water from the A Street well was pumped before being distributed.

At the F Street well whatever "ground" water found its way through the wall of the well was excluded from the water obtained from the deep stratum by an inner cement basin which had been constructed so as to have a space of about 3 feet between the outer surface of the basin and the wall of the well.

CONCLUSIONS AND RECOMMENDATIONS.

Upon terminating the investigation on November 17, a verbal report was made to the city council. The meeting of the council for the purpose of receiving the report was public and was attended by a number of interested citizens. The findings of the investigation were discussed and the following conclusions and recommendations submitted:

CONCLUSIONS.

1. That a distinct outbreak of typhoid fever had occurred during August, 1911, in that section of the city bounded on the south by J Street and on the west by Fourteenth Street.
2. That insanitary conditions in respect to faulty privies and water closets, personal contact, flies and foods, probably had operated to some extent in the spread of the infection, but that the chief source of the infection immediately responsible for the outbreak was the public water supply.
3. That the infection responsible for the outbreak reached the water supply either at the Rice well or at some place or places in the water mains distributing water especially to the section north of J Street and east of Fourteenth Street.
4. That it was highly advisable to engage the services of an expert sanitary engineer with a view to having determined as exactly as possible all dangerous relations of sewers to water mains and wells.
5. That the water of the Rice well and the F Street well during the period of investigation was free from contamination, but that this finding did not prove that the Rice well had not been dangerously polluted during the period of causation of the outbreak and offered no assurance whatever that this well might not become dangerously contaminated at any time in the future.

6. That the water of the A Street well was found during the investigation to show evidence of pollution of such character as to suggest sewage as its source and that the water from that well should be regarded as potentially dangerous.

7. That all three of the public wells were of a grossly faulty type from a sanitary standpoint and should be reconstructed as soon as practicable, so as to have tubular water-tight casings extend from the deep-water bearing stratum to the surface.

RECOMMENDATIONS.

1. Have bacteriological examinations of the water from each of the three wells and physical examinations of the wells continued practically daily until corrections of faulty conditions in and about the wells have been made, so that if any pronounced pollution should occur it could be discovered promptly and precautions taken accordingly.
2. Engage an expert sanitary engineer to make a complete survey of the water and sewage systems.
3. Have cement basins constructed in Rice and A Street wells to receive the water coming up through the pipes from the deep water-bearing stratum and to exclude absolutely from the water supply all water which might find its way through the walls of the wells.
4. Have doors over manholes leading to the reservoir at the A Street well made tight so as to prevent contamination of the water by dust and surface washings.
5. Have all insanitary conditions, particularly in respect to faulty privies, in the vicinity of the wells corrected.
6. Have done away with, as soon as practicable, the obviously needless superstructures over and around the wells and have any additional wells in contemplation constructed in accordance with well-recognized modern sanitary principles for artesian wells.

None of these recommendations was carried out.

A SECOND OUTBREAK OF TYPHOID FEVER WHICH OCCURRED DURING THE WINTER OF 1911-12.

In December an extensive outbreak of enteritis ("winter cholera") occurred. The outbreak was largely confined to the section of the city north of J Street and east of Fourteenth Street. Several thousand cases are said to have developed. Suspicion fell on the Rice well, and on inspection Dr. Waite found a stream of water running into the well through an old pipe which passed through the wall about 15 feet below the road level. Dr. Waite found, on examining the water which entered through the pipe, a bacterial content much resembling that of diluted sewage.

Following the outbreak of "winter cholera" there was in the same section of the city an outbreak of typhoid fever.

Cases of typhoid were reported by months as follows:

	Cases.
December, 1911	4
January, 1912	272
February, 1912	28

The Rice well was closed on December 20. Treatment of the A Street well water with hypochlorite of lime was begun on January 17.

On excavating around the Rice well a near-by sewer was found to be in leaky condition, and the evidence is said to have been strong that the entrance into the Rice well of sewage from this sewer was responsible for the winter outbreak.[1]

In view of these developments it seems highly probable that the summer outbreak resulted from a combination of circumstances somewhat similar to those responsible for the winter outbreak.

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[1] Westerfield, William: Municipal Journal and Engineer, Feb. 22, 1912, Vol. XXXII, No. 8, p. 280.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

EAST PROVIDENCE (TOWN), R. I.

GARBAGE AND REFUSE—CARE AND DISPOSAL.

SEC. 10. Every tenement house, dwelling house, or other building where swill and garbage shall accumulate shall be provided with a suitable receptacle for such swill or garbage, and no ashes or other rubbish of any kind shall be placed in any such receptacle, nor shall any swill, garbage, or offal be placed in any receptacle for ashes or rubbish or deposited in any yard or vault or any other place than its proper receptacle.

SEC. 11. No owner, lessee, or occupant of any building or premises within the town shall deposit or allow to be deposited, or allow to remain upon or in said building or premises, any dirt, offal, decaying animal or vegetable matter, or solid or liquid filth of any kind, which, in the opinion of the town council, is any way offensive or a nuisance.

[From chap. 4 of an ordinance adopted Aug. 2, 1911.]

SEC. 1. The occupant of every tenement house, dwelling house or other building where swill or garbage shall accumulate shall provide a suitable receptacle, properly covered, for such swill or garbage, and no dishwater, ashes, house sweepings, bottles, crockery, earthen, glass, tin, or iron ware, or other rubbish of any kind shall be placed in any such receptacle, nor shall any swill, garbage, or offal be placed in any receptacle for ashes or rubbish or deposited in any yard or vault or in any other place than its proper receptacle.

SEC. 2. All swill and house offal shall be removed from each house within the parts of the town covered by any contract or contracts that may be made with such town by any person or persons for such removal at least three times each week during the months of May, June, July, August, September, and October, and twice each week during the months of November, December, January, February, March, and April of each and every year, and as much oftener as may be necessary to prevent nuisance and decomposition of such swill and house offal.

SEC. 3. All swill and house offal shall be removed from the town in water-tight closely covered vehicles, drawn by one or more horses or mules, or in water-tight tubs or casks with covers securely fastened, so as to make the tubs or casks air tight, and all such vehicles, tubs, or casks so used shall be kept clean and well painted on the outside. No vehicle, tub, or cask shall be used, or continued in use, for the removal of swill and house offal from the town unless first examined and approved by the health officer; and the covers of all vehicles, tubs, and casks containing swill or house offal shall be kept tightly closed when they are driven through the streets of the town.

SEC. 4. All vehicles used to remove swill and house offal, or to transport tubs or casks containing swill and house offal, shall be duly licensed and numbered, and all such vehicles, tubs, and casks shall have upon them such other marks as may be required by the health officer.

SEC. 5. Whenever any person shall be designated and appointed to remove swill and house offal from the town, the designation and appointment shall state definitely the houses, buildings, or districts from which such person so designated is to remove the swill and house offal, and he shall not remove the swill and house offal from any other house, building, or district than that from which he is designated and appointed to remove it.

SEC. 6. All designations and appointments of persons to remove swill and house offal shall be for the current municipal year, and may be revoked at any time by the town council.

SEC. 7. No person, unless appointed and designated so to do by the town council, shall remove, carry, or transport any swill or house offal from any house, market, building, or premises within the town over, upon, or through any street or highway in said town; nor shall any person, unless licensed so to do by the town council, carry or transport any swill or house offal, removed from any building or premises without the town, over, upon, or through any street or highway in said town.

SEC. 8. Every application for a license to remove, carry, or transport any swill or house offal over, upon, or through any street or highway in said town shall state whether said swill or house offal is to be removed to some place without or within the limits of the said town, and, if within the limits of the said town, shall designate the particular place to which such swill or house offal is to be removed.

SEC. 9. For every license to remove, carry, or transport swill or house offal over, upon, or through any street or highway in said town, the licensee shall pay such sums as may be fixed and determined from time to time by the town council.

SEC. 10. Every person violating any of the provisions of this ordinance shall be fined not less than $2 nor more than $20 for each day's continuance of such violation.

[Chap. 30 of an ordinance adopted Aug. 2, 1911.]

MARQUETTE, MICH.

GARBAGE AND REFUSE—COLLECTION AND DISPOSAL.

SEC. 1. As used in this ordinance the words and phrases shall be construed as follows: (1) "Garbage" shall include every refuse of animal, fruit, or vegetable matter that attends the preparation, use, cooking, dealing in, transporting, or storing of meat, fish, fowl, fruit, or vegetables, and dead animals under 6 pounds each in weight not killed for food; (2) "carcass" shall include any dead animal over 6 pounds in weight, not slaughtered for food, in which the process of decay has commenced or is about to commence; (3) "rubbish" shall include all refuse of housekeeping, other than garbage, ashes, cinders, old or refuse cans, bottles, jugs, crocks, crockery, metals, utensils, shoes, hats, rags, and paper, and other like refuse articles and materials; leaves, grass, weeds, sawdust, shavings, chips, and other like articles and substances; and earth, sand, gravel, stone, mortar, and other like substances; (4) "garbage tank" shall mean a water-tight can, jar, cask, box, or other vessel used for the reception of garbage, with a tightly fitting cover thereon; (5) "garbage wagon" shall mean a vehicle for the transportation of garbage, night soil, or other putrid substances, the tank or receptacle of which shall be water tight and entirely closed with tightly fitting covers to all openings therein; (6) "city scavenger" shall mean such person, firm, or corporation as shall be duly licensed and authorized in pursuance of this ordinance to collect, receive, and transport garbage and carcasses in this city; (7) "garbage collector" shall mean a city scavenger or the authorized agent or employee of a city scavenger, or of the board of health, while engaged in the work of gathering and disposing of garbage and other refuse substances; (8) "city garbage dump" shall mean any grounds provided by the city for the dumping or other disposition of garbage, carcasses, and other putrid or offensive substances; (9) "public rubbish dump" shall mean any grounds or waters provided by the city for the dumping or other disposition of rubbish or any private premises the owner of which, or his agent, has authorized to be used by the public, or by the city scavenger, for the dumping or disposition of rubbish thereon.

SEC. 2. The health officer, subject to the approval of the committee on public health of the common council, is hereby authorized and empowered in behalf of the city, from time to time, to enter into a contract in writing, upon such terms and conditions as may be agreed upon, for a period of not exceeding three years, with any suitable person, firm, or corporation, to become city scavenger, for the purpose of furnishing all necessary labor, teams, garbage wagons, and other vehicles, garbage tanks, tools, implements, and other things necessary for the collection, removal, and disposition of garbage, carcasses, and other refuse matter, in the manner required by such contract and by the ordinances of the city and the rules, regulations, and requirements of the board of health and of the health officer applicable thereto as may be from time to time adopted or prescribed.

SEC. 3. The health officer shall have power, by written order filed with the recorder to establish in the city convenient garbage-collection districts, and may change the same from time to time in like manner. The health officer, by like order, shall have power to make such rules, regulations, and requirements to be observed in the performance of the duties of the city scavenger as he may from time to time deem best for the interests of the city, not in conflict with the ordinances of the city or any rules, regulations, and requirements made by the board of health; and all such rules, regulations, and requirements made by the board of health, or the health officer, shall be observed and complied with by the city scavenger and by every person employed by him in the performance of his contract.

Sec. 4. Before being licensed as city scavenger the contractor shall file with the recorder a bond to the city of Marquette, or its assigns, for the use and benefit of whomsoever may be concerned, in such penal sum as the contract shall require, not less than $2,000, with at least two such sureties thereon as possess the property qualifications required of sureties upon bonds of retail liquor dealers under the laws of this State, who shall qualify concerning such qualifications in the same manner required by law of such sureties, or with an authorized surety company as such surety, which bond shall be subject to the approval of the controller and city attorney, and shall be conditioned that such contractor, as city scavenger, shall faithfully carry out and perform all the terms and conditions of such contract and comply with all the ordinances of the city and the rules and regulations of the board of health and the health officer applicable thereto, and pay for all labor, materials, teams, vehicles, and other property procured for the performance of such contract, or any renewal thereof.

Sec. 5. No license shall be issued to any person, firm, or corporation as city scavenger until a duplicate original of the contract in relation thereto, provided for in this ordinance, shall have been filed with the recorder; whereupon and upon the payment to the city treasurer of a license fee of $1 the recorder shall issue to the contractor a license as city scavenger, which license shall authorize said city scavenger to collect, receive, transport, and dispose of garbage, carcasses, rubbish, and other refuse materials in this city; which license, upon the payment of a like fee, shall be renewed by the issue of a new license from time to time as may be necessary during the term of the contract under which the same was issued; and no license shall be issued to any other person, firm, or corporation as city scavenger, or for the collection, transportation, or disposition of garbage, carcasses, or other putrid substances, during the life of any such contract: *Provided*, That the termination of any such contract by abandonment, lapse of time, or otherwise, shall operate to revoke any such license then in force.

Sec. 6. Each city scavenger shall have the exclusive right to and shall, except as herein otherwise provided, collect, transport, and dispose of all garbage and carcasses from all of the garbage districts of this city, for the period of his contract; and during the same period shall have the exclusive right to and shall collect, transport, and dispose of abandoned dead animals and carcasses found upon the streets or other public places of the city. He shall provide, at his own expense, all the necessary force of men, teams, garbage tanks, garbage wagons, vehicles, tools, implements, fuel, disinfectants, and other things necessary for the performance of his contract in a manner satisfactory to the health officer and the board of health.

Sec. 7. The city scavenger shall cause all garbage, dead animals, and putrid substances collected by him or his employees to be forthwith deposited upon a city garbage dump, at such place or places thereon as may be required by the health officer or ground keeper; or shall make such other disposition thereof as shall be permitted in writing by the health officer. He shall receive no compensation from the city for anything required by his contract except for the gathering, removal, and disposition of dead animals found in the streets of other public places of the city, for which he shall be paid the prices fixed in his contract, not exceeding the sums permitted by this ordinance. Keepers of city dump grounds shall be employed by and shall serve during the pleasure of the health officer and the committee on public health of the common council, and shall perform such duties as may be required by the health officer and said committee and shall receive such compensation from the city as the common council shall fix or allow.

Sec. 8. The city scavenger shall be permitted to, and shall upon request therefor, make contracts and arrangements with the inhabitants of the city, respectively, in the various garbage collection districts established therein, for the removal of garbage, carcasses, night soil, and other putrid refuse matter, from the premises of the owner or occupant of any premises in any such district, to a city garbage dump. Upon being paid or tendered the proper charges therefor, the city scavenger shall remove from any premises in any such garbage district all garbage, carcasses, night soil, or other putrid refuse matter and dead animals to a city garbage dump. Upon being paid or tendered such sums therefor as may be agreed upon by the parties, or as shall be fixed by the health officer, the city scavenger shall remove from any premises in the city outside of an established garbage district, all garbage, carcasses, night soil, or other putrid refuse matter and dead animals, and dispose of the same in such manner as may be permitted in writing by the health officer.

Sec. 9. All rates and charges to be paid to the city scavenger for the collection, removal, and disposition of garbage from any of the following places in any garbage district shall be payable on demand weekly in advance, and shall not exceed the following sums, except upon written approval of the health officer under exceptional circumstances warranting larger sums, viz:

Each household and boarding house—for weekly collections of 15 gallons or less, 12½ cents for each week, or 50 cents per month; for weekly collections of 15 to 30 gallons, 25 cents each week, or $1 per month.

Each hotel or restaurant, and each store or place where fresh meat, fish, fruit, or vegetables are kept or sold, and each other place where garbage is produced—for semiweekly collections, 25 cents for each collection of not exceeding 30 gallons.

Sec. 10. All rates and charges to be paid to the city scavenger for the collection, removal, and disposition of dead animals, carcasses, and other putrid or offensive refuse materials and substances, except when done at the expense of the city, shall be payable in advance; and such charges shall not, except upon written approval of the health officer, under circumstances warranting larger sums, exceed the following sums, viz:

Dogs, 50 cents to 75 cents, according to size; horses or cows, $2.50 each; all other dead animals and carcasses, from 50 cents to $2.50 each, according to size.

Night soil and other putrid or offensive refuse, such reasonable sums as the health officer may fix or approve.

Sec. 11. The city scavenger shall, upon the request of any occupant or person in control of any premises within any garbage district of the city, and upon payment or tender of the proper charge therefor, remove from such premises, as soon as practicable, all such rubbish as shall be conveniently piled or contained in boxes, barrels, or other suitable receptacles convenient of access for loading on vehicles; and all such rubbish shall be deposited upon some rubbish dump, in such place and manner thereon as may be required by the health officer; and the city scavenger shall be entitled to charge and collect in advance for such services for each cubic yard of rubbish the sum of 50 cents, and for rubbish to be removed from any basement, cellar, or other equally inaccessible place, 75 cents per cubic yard.

Sec. 12. The health officer shall investigate all complaints made to him in writing by any person concerning the performance of his duties by the city scavenger and concerning the duties of all other persons under this ordinance or under any of the rules and regulations made in pursuance thereof; and shall, when deemed necessary by him, make complaints for violations of this ordinance or of such rules and regulations. In case of dispute as to his duties or charges for services between the city scavenger and any person requiring his services, such controversy may be referred by either party thereto to the health officer for settlement; and his determination shall be binding upon all parties who have submitted to or participated in any such controversy before him.

Sec. 13. In case any contractor as city scavenger shall in any respect fail to perform to the satisfaction of the health officer any of the terms of his contract as city scavenger, or shall neglect to put and keep on the work a sufficient force of men, teams, vehicles, and other things necessary to the proper performance of the work, then the health officer shall be empowered, at the expense of the contractor, to supply any such deficiencies in the equipment and force of the contractor and to perform, so far as may be necessary, the duties of such contractor; in which event such contractor shall forfeit and pay to the city, in addition to the actual cost and expense of supplying such deficiencies and performing such duties, an amount equal to one-half such cost and expense, the same to be determined by arbitration in case of disagreement as to the amount thereof.

Sec. 14. The city shall have the right to terminate the contract of any city scavenger and to purchase from the contractor all his outfit and equipment of personal property necessarily used by him in carrying out such contract, at a price to be fixed by arbitration, and to deduct from such purchase price the amount of any claims or liens against any of such property and any claims of the city against the contractor. In case of any arbitration under such contract, three disinterested freeholders of the city shall be selected as arbitrators, one by the health officer, one by the contractor, and one by the two so chosen; and the award in writing of any two of them shall be binding on the parties.

Sec. 15. Upon the expiration of the contract of any city scavenger, the city, at its option, shall either buy from the contractor his entire outfit and equipment of personal property necessarily used by him in the carrying out of such contract at a valuation to be placed thereon and fixed by arbitration, or, if cause does not exist warranting the refusal so to do, shall extend such contract for a period of not less than one year, with such reasonable conditions and requirements as to such extended period as the health officer or the board of health may prescribe.

Sec. 16. No person shall place, have, or keep on any premises in this city any carcass; nor shall any person place, have, or keep on any premises in any garbage-collection district of this city any garbage, unless the same be thoroughly drained of all fluid substances and placed and kept in a tightly covered garbage tank; nor shall any person keep any garbage in any garbage tank in the city for a period longer than eight days: *Provided*, That this section shall not apply to any city garbage dump.

Sec. 17. It is hereby made the duty of the occupant or occupants of every dwelling house, store, hotel, or other building or place in this city within any garbage-collection district where garbage is produced, to provide and keep on the premises a suitable garbage tank, of such size and weight as to be conveniently handled by a garbage collector, and to keep the same in the rear or in the basement, area, or passageway of the house or building on such premises and in a place readily accessible for collection by a garbage collector.

Sec. 18. No person shall place or cause or permit to be placed or kept any garbage tank on any sidewalk, street, alley, or public place in this city; nor on any private premises in this city in proximity to any public street, alley, or place; nor unnecessarily near any building on adjoining premises occupied by any person.

Sec. 19. No person shall remove the cover from any garbage tank containing any garbage, except when necessary and only so long as necessary to place garbage in such tank or to empty or cleanse the same, and shall immediately replace such cover; nor shall any person, other than a garbage collector in the performance of his duties, in any manner interfere with any garbage tank or with the contents thereof, except for the purpose of placing garbage therein or of cleansing the same.

Sec. 20. No person who is not a garbage collector shall, in any garbage-collection district of this city, collect, gather, or receive for transportation any garbage or carcass, or carry or transport or have in his possession in any public street, alley, or public place in any such district any garbage or carcass: *Provided*, That this section shall not apply to persons transporting garbage under permission granted in pursuance of section 21 of this ordinance.

Sec. 21. Every occupant of any premises in this city whereon any garbage tank is kept shall permit any garbage collector at any time, for the purpose of disposing of the garbage therein, to remove from such premises each such tank, or the contents thereof as such collector may prefer; and all such tanks shall be promptly and within one hour returned to such premises, unless other suitable garbage tank or tanks are left in lieu thereof; but in all cases the garbage tanks belonging to any premises or the occupants thereof shall be returned to such premises within four hours after any such removal thereof: *Provided*, That this section shall not apply to any person who at least daily destroys by cremation all garbage produced upon the premises occupied by such person, or disposes of all such garbage in such manner as may be permitted by the common council, or by the written permission of the health officer filed with the recorder of the city; and any such permission may be revoked by the common council; but such garbage shall not be permitted to be or be by any person buried in the earth or fed to swine on any premises in the business or residence portions of the city, or in any garbage collection district of the city; or be permitted to be or be by any person transported upon any of the streets or alleys of the city, except in garbage tanks tightly covered and cleansed so as not to give off or emit any offensive odor.

Sec. 22. All garbage, carcasses, and other putrid substances while being removed or transported in this city shall be so covered, inclosed, and protected as not to give off any offensive odors. All garbage tanks, garbage wagons, and other vehicles in which putrid substances are transported in this city shall be kept thoroughly cleaned and disinfected. No person shall allow or permit any garbage or other putrid or offensive substance or fluid to spill, drop, or leak from any garbage tank, garbage wagon, or other vehicle upon any private premises or upon any street or alley in this city. All vehicles used by the city scavenger for the transportation of garbage shall have attached thereto, upon each side thereof, a sign with the words "garbage wagon" conspicuously painted thereon, together with the number of the wagon, in letters not less than 4 inches in height. No person other than the city scavenger or person in his employ shall drive or use any vehicle in this city with the words "garbage wagon" displayed thereon.

Sec. 23. Any person violating any of the provisions of this ordinance shall, upon conviction thereof, be punished by a fine of not less than $5 nor more than $100, or by imprisonment in the city lockup or jail of the county of Marquette for a term not to exceed 90 days, or by both such fine and imprisonment, in the discretion of the court before whom a conviction may be had.

[Ordinance adopted July 17, 1911, and amended Oct. 2, 1911.]

PLAGUE-PREVENTION WORK.

PLAGUE-INFECTED SQUIRRELS FOUND.

During the week ended April 13, 1912, plague infection was found in seven ground squirrels collected in Alameda County, Cal.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 4,490 acres of land in Alameda County were covered with poison during the week ended April 13, 1912.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	**Jan. 30, 1908**	**Oct. 23, 1908**	**None**	**398 rats.**
Oakland	**Aug. 9, 1911**	**Dec. 1, 1908**	**do**	**126 rats.**
Berkeley	**Aug. 27, 1907**	**None**	**do**	**None.**
Los Angeles	**Aug. 11, 1908**	**do**	**Aug. 21, 1908**	**1 squirrel.**
Counties—				
Alameda (exclusive of Oakland and Berkeley).	**Sept. 26, 1909**	**Wood rat, Oct. 17, 1909.**	**Apr. 5, 1912**	**121 squirrels and 1 wood rat.**
Contra Costa	**July 21, 1911**	**None**	**Sept. 23, 1911**	**364 squirrels.**
Fresno	**None**	**do**	**Oct. 27, 1911**	**1 squirrel.**
Merced	**do**	**do**	**July 13, 1911**	**5 squirrels.**
Monterey	**do**	**do**	**Aug. 6, 1911**	**Do.**
San Benito	**June 5, 1910**	**do**	**June 8, 1911**	**22 squirrels.**
San Joaquin	**Sept. 18, 1911**	**do**	**Aug. 26, 1911**	**18 squirrels.**
San Luis Obispo	**None**	**do**	**Jan. 29, 1910**	**1 squirrel.**
Santa Clara	**Aug. 23, 1910**	**do**	**Oct. 5, 1910**	**23 squirrels.**
Santa Cruz	**None**	**do**	**May 17, 1910**	**3 squirrels.**
Stanislaus	**do**	**do**	**June 2, 1911**	**13 squirrels.**
Washington:				
City—				
Seattle	**Oct. 30, 1907**	**Sept. 21, 1911**	**None**	**25 rats.**

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Total collected.	Found dead.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Apr. 13, 1912	[1] 132	4	99	
Oakland	do	[2] 842	12	657	
San Francisco	do	[3] 1,853	3	1,395	
Washington:					
City—					
Seattle	do	994		957	

[1] Identified: Mus norvegicus, 103; Mus musculus, 29.
[2] Identified: Mus norvegicus, 668; Mus rattus, 1; Mus musculus, 173.
[3] Identified: Mus norvegicus, 1,035; Mus rattus, 199; Mus alexandrinus, 240; Mus musculus, 379.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended April 13, 1912, 185 ground squirrels from Alameda County, Cal., were examined for plague infection. Seven were found plague-infected.

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 4, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	1		New Orleans, La	2	1
Chicago, Ill	1	2	Newport, Ky	1	
Cincinnati, Ohio	3	1	New York, N. Y	7	4
Cleveland, Ohio	1	1	Niagara Falls, N. Y		1
Columbus, Ohio	1	1	Oklahoma, Okla		1
Dayton, Ohio		2	Omaha, Nebr	2	
El Paso, Tex	3	1	Philadelphia, Pa	1	
Galesburg, Ill	1	1	Pittsburgh, Pa	1	1
Haverhill, Mass		4	St. Louis, Mo	2	2
Kansas City, Kans	8		San Francisco, Cal		2
Kansas City, Mo	6	7	South Omaha, Nebr		1
Lexington, Ky		1	Springfield, Ill		2
Lowell, Mass	1	2	Springfield, Mass	1	1
Melrose, Mass		1	Yonkers, N. Y	1	1
Nashville, Tenn	1				

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 4, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md		1	Philadelphia, Pa	16	3
Cincinnati, Ohio		1	Pittsburgh, Pa	5	2
Cleveland, Ohio	5		St. Louis, Mo	19	1
Harrisburg, Pa	1		San Francisco, Cal	3	
Hartford, Conn	1		Springfield, Ill	1	
Jersey City, N. J		1	Springfield, Mass		1
Milwaukee, Wis	4		West Hoboken, N. J	1	
New York, N. Y	45	8	Wilkes-Barre, Pa	1	
Passaic, N. J	2		Williamsport, Pa	1	

PELLAGRA.

During the week ended May 4, 1912, one death from pellagra was reported at Chicago, Ill., and one death at Northampton, Mass.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 4, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Altoona, Pa		2	Evansville, Ind		2
Auburn, N. Y	2	1	Fall River, Mass		4
Baltimore, Md		14	Fort Wayne, Ind		1
Binghamton, N. Y	1	1	Galesburg, Ill	1	1
Boston, Mass		32	Harrisburg, Pa		1
Braddock, Pa	2	1	Hartford, Conn		1
Bridgeport, Conn		2	Kalamazoo, Mich		1
Cambridge, Mass		3	Kansas City, Mo	4	5
Chelsea, Mass		2	Knoxville, Tenn		1
Chicago, Ill	30	103	Lancaster, Pa	1	
Cincinnati, Ohio		5	Lawrence, Mass		4
Cleveland, Ohio	36	8	Lexington, Ky		1
Clinton, Mass		2	Lowell, Mass		4
Coffeyville, Kans	1		Lynchburg, Va		1
Cumberland, Md		2	Lynn, Mass		6
Danville, Ill		1	Malden, Mass		1
Dayton, Ohio		3	Manchester, N. H	3	3
El Paso, Tex		5	Medford, Mass		1

PNEUMONIA—Continued.

Cases and deaths reported by city health authorities for the week ended May 4, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Montgomery, Ala		1	Saginaw, Mich		2
Nashville, Tenn		4	San Antonio, Tex		4
Newark, N. J		9	San Diego, Cal	1	1
New Bedford, Mass		6	San Francisco, Cal	13	
New Castle, Pa	1		Saratoga Springs, N. Y	1	2
New Orleans, La		2	Schenectady, N. Y	6	3
Newton, Mass		1	South Bethlehem, Pa	1	
Newport, Ky	1	1	South Omaha, Nebr		3
New York, N. Y		112	Spokane, Wash		3
Oakland, Cal		3	Springfield, Ill		1
Oklahoma, Okla		2	Springfield, Mass		1
Omaha, Nebr		4	Taunton, Mass		2
Pasadena, Cal		1	Toledo, Ohio		6
Passaic, N. J		3	Washington, D. C		10
Philadelphia, Pa	20	36	Wilkes-Barre, Pa		2
Pittsburgh, Pa	26	26	Wilkinsburg, Pa		1
Pittsfield, Mass		1	Williamsport, Pa		1
Providence, R. I		5	Wilmington, Del		1
Roanoke, Va		2	Wilmington, N. C	6	
Rockford, Ill		2	Yonkers, N. Y		1

POLIOMYELITIS.

During the week ended May 4, 1912, one case of poliomyelitis was reported in Boston, Mass., and one case in New York, N. Y.

INDIANA.

During the month of March, 1912, 4 cases of poliomyelitis, with 1 death, were reported, occurring as follows: Adams County, 1 case; Hancock County, 1 case; Lawrence County, 1 case; Spencer County, 1 case, with 1 death.

RABIES.

INDIANA.

During the month of March, 1912, 8 cases of rabies, with 1 death, were reported in Indiana. The cases occurred in five counties. The death occurred in Marion County.

TETANUS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 4, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md		1	New York, N. Y	1	
Chicago, Ill		1	Philadelphia, Pa	1	
Nashville, Tenn		1	Pittsburgh, Pa	1	
Newark, N. J		1	Schenectady, N. Y	1	
New Orleans, La		2	Wilmington, N. C		2

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED MAY 24, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
California:				
Counties—				
Alameda	Mar. 1-31	2		
Eldorado	do	1		
Fresno	do	8		
Kern	do	5		
Los Angeles	do	9		
Nevada	do	5		
Riverside	do	3		
Sacramento	do	2		
San Bernardino	do	13		
San Diego	do	1		
San Joaquin	do	3		
Santa Clara	do	5		
Santa Cruz	do	1		
Shasta	do	1		
Siskiyou	do	1		
Tulare	do	7		
Total for State		67		
Alameda	Apr. 1-30	1		
Butte	do	32		
Contra Costa	do	1		
Fresno	do	7		
Los Angeles	do	8		
Marin	do	2		
Orange	do	1		
Sacramento	do	6		
San Bernardino	do	5	1	
San Diego	do	8		
San Luis Obispo	do	1		
Tulare	do	4		
Total for State		76	1	
*Louisiana:				
New Orleans	May 5-11	6		
Maine:				
Counties—				
Androscoggin	Apr. 1-30	32	3	
Franklin	do	6		
Kennebec	do	3		
Penobscot	do	2		
Piscataquis	do	7		
Sagadahoc	do	4		
Somerset	do	15		
Total for State		69	3	
Michigan:				
Counties—				
Allegan	Apr. 1-30	2		
Barry	do	7		
Berien	do	3		
Cass	do	1		
Chippewa	do	1		
Hillsdale	do	3		
Jackson	do	1		
Kalamazoo	do	16		
Mackinac	do	1		
Montcalm	do	3		
St. Clair	do	4		
Wayne	do	4		
Total for State		46		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended May 24, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Nebraska:				
Lincoln	Apr. 1-30	4		
Oregon:				
Counties—				
Baker	Feb. 1-29	20	1	
Benton	do	10		
Clackamas	do	1		
Grant	do	1		
Jackson	do	2		
Lane	do	1		
Linn	do	2		
Malheur	do	1		
Marion	do	6		
Multnomah	do	34		
Umatilla	do	6		
Union	do	1		
Washington	do	1		
Total for State		86	1	
Baker	Mar. 1-31	8		
Benton	do	4		
Columbia	do	4		
Marion	do	9		
Multnomah	do	25		
Umatilla	do	3		
Union	do	5		
Washington	do	3		
Total for State		61		
Virginia:				
Counties—				
Appomatox	Apr. 1-30	2		
Chesterfield	do	2		
Dunwiddie	do	4		
Greene	do	1		
Henrico	do	3		
Lee	do	1		
Mecklenburg	do	13		
Norfolk	do	15		
Russell	do	4		
Scott	do	6		
Southampton	do	2		
Wise	do	41		
Total for State		94		
Grand total for the United States		509	5	

McCULLOCH COUNTY, TEX.

Dr. G. P. Gallan, health officer, McCulloch County, Tex., reports, regarding the 10 cases of smallpox with 4 deaths[1] which occurred in McCulloch County during the month of March, 1912, as follows:

None of the persons developing smallpox had ever been vaccinated. The four deaths occurred in a woman and three children, the latter being a 3-month old infant, a 3-year old child, and a 5-year old child. These four persons had come from Fort Worth, Tex. Of the six cases that recovered, one had confluent smallpox and the other five a discrete form of the disease.

UVALDE COUNTY, TEX.

Dr. B. M. Hines, health officer Uvalde County, Tex., reports, regarding the four cases of virulent smallpox[2] which occurred in Uvalde County during February, 1912, as follows:

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[1] Public Health Reports, May 10, 1912, p. 712.

[2] Public Health Reports, May 3, 1912, p. 655.

The first case originated in a Mexican who went from Uvalde County to Ciudad Porfirio Diaz, Mexico, and there came in contact with cases of smallpox. On his return he developed a severe case of the confluent type of the disease. His wife, who had never been vaccinated, contracted smallpox from her husband, had the confluent type, and died on the seventh or eighth day. Her sister, who had had varioloid about 15 years before, sickened next and had a severe case, with less eruption, however, than her sister had had. The fourth case developed in a man who stated that he had had smallpox when a boy 14 or 15 years of age, since which time he had nursed many different smallpox cases and had apparently been immune. He developed the confluent type and was very ill. All other contacts were successfully vaccinated and no further cases developed.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAY 4, 1912.

Cities.	Population, United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	192	7	2	9	....	8	1	....	....	45	24	5	3
Boston, Mass	670,585	224	36	3	142	4	27	1	1	....	90	24	4	....
Chicago, Ill	2,185,283	639	109	20	243	2	113	12	9	3	149	79	10	2
Cleveland, Ohio	560,663	148	27	3	81	....	31	4	....	....	25	15	3	....
New York, N. Y	4,766,883	1,542	297	28	1,702	25	409	20	....	....	480	188	29	2
Philadelphia, Pa	1,549,008	467	58	8	37	2	79	2	....	....	100	63	12	1
Pittsburgh, Pa	533,905	147	10	1	99	....	53	1	....	....	17	15	8	1
St. Louis, Mo	687,029	200	22	3	59	1	29	....	2	....	38	16	2	1
Cities having from 300,000 to 500 000 inhabitants.														
Cincinnati, Ohio	364,463	115	6	....	19	....	22	2	....	....	24	23	....	2
Detroit, Mich	465,766	115	21	....	....	....	44	4	1	....	....	....	....	....
Milwaukee, Wis	373,857	122	10	....	123	....	27	2	....	....	16	7	8	2
New Orleans, La	339,075	117	5	1	6	....	10	1	6	....	15	14	7	1
San Francisco, Cal	416,912	134	5	....	30	1	4	....	....	....	25	5	....	....
Washington, D. C	331,069	112	5	....	101	....	6	....	....	....	22	16	4	....
Cities having from 200,000 to 300,000 inhabitants.														
Jersey City, N. J	267,779	79	....	....	....	....	....	....	....	....	....	12	....	1
Kansas City, Mo	248,381	19	4	....	4	....	5	....	....	....	2	7	2	....
Providence, R. I	224,326	70	11	....	23	6	28	....	....	....	16	6	....	1
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	20	2	1	2	....	7	....	....	....	2	2	....	....
Cambridge, Mass	104,839	32	9	....	78	1	4	....	....	....	9	9	....	....
Columbus, Ohio	181,548	64	4	....	45	....	11	....	....	....	2	11	4	2
Dayton, Ohio	116,577	....	1	....	43	1	....	....	1	....	....	5	1	....
Fall River, Mass	119,295	35	5	1	3	....	1	....	....	....	14	4	1	1
Lowell, Mass	106,294	27	....	....	34	1	7	....	....	....	3	3	....	....
Nashville, Tenn	110,364	38	....	....	....	....	1	....	....	....	4	6	2	....
Oakland, Cal	150,174	49	2	....	10	....	2	....	1	....	10	10	1	....
Omaha, Nebr	124,096	44	4	....	....	....	4	1	....	....	....	....	....	....
Spokane, Wash	104,402	....	2	....	39	....	2	....	3	....	....	2	....	....
Toledo, Ohio	168,497	54	2	1	80	....	2	....	1	....	....	6	2	1
Worcester, Mass	145,986	40	6	....	30	....	3	....	....	....	5	7	1	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended May 4, 1912—Continued.

Cities.	Population, United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	20	3	1			1							
Bayonne, N. J	55,545		3		8		5				2			
Brockton, Mass	56,878	10	1		40	1					3			
Camden, N. J	94,538		1		1		5				11		1	
Duluth, Minn	78,466	13					14				2	2	1	1
Evansville, Ind	69,647	13	1		2						14		1	
Fort Wayne, Ind	63,933	10	1		11		1				1		1	
Harrisburg, Pa	64,186	15	3		61						5	1		1
Hartford, Conn	98,915	22	3		43		5	1			6	1		
Hoboken, N. J	70,324		4		2		1				4			
Johnstown, Pa	55,482	22	2		4		4							
Kansas City, Kans	82,331				2				1		5			
Lawrence, Mass	85,892	23	2	1	1						6	3		
Lynn, Mass	89,336	27	4		5		5				3	2	1	
Manchester, N. H	70,063	27			5									
New Bedford, Mass	96,652	28	2	1	11		5				5			
Oklahoma City, Okla	64,205	10			1						1	2		
Passaic, N. J	54,773	18	1		49		2				3	2		
Saginaw, Mich	50,510	14									1	1		1
San Antonio, Tex	96,614	68					3					12		
Schenectady, N. Y	72,826	12	1		55		4				1	2		
South Bend, Ind	53,684	16					2		1			1		
Springfield, Ill	51,678	18										1	1	1
Springfield, Mass	88,926	27	1		5		2				2	2	1	
Trenton, N. J	96,815	41	1		3	1	6				7	4	2	
Wilkes-Barre, Pa	67,105	21	1		2		1				8	2		
Wilmington, Del	87,411	29										3		
Yonkers, N. Y	79,803	22	3		12		7				3	4		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	12			1		1				1			
Auburn, N. Y	34,668	9			1						2	1		
Aurora, Ill	29,807	9	1				1					1		
Binghamton, N. Y	48,443	17			1		1				1	1	3	1
Brookline, Mass	27,792	5			21		3				1		1	
Chattanooga, Tenn	44,604								1		2			
Chelsea, Mass	32,452	14	1		40						4	1		
Chicopee, Mass	25,401	3			5									
Danville, Ill	27,871	4			1						1			
East Orange, N. J	34,371	5	5		23		1				1		1	
Elmira, N. Y	37,176	13	1		27						1	1		
El Paso, Tex	39,279	35					6		1			6		
Everett, Mass	33,484	12	2		24						3	2		
Fitchburg, Mass	37,826	5										1		
Haverhill, Mass	44,115		1		13	1	5				2	4		
Kalamazoo, Mich	39,437	19					7							
Knoxville, Tenn	36,346	9				3				2		1		
La Crosse, Wis	30,417	8					2		2					
Lancaster, Pa	47,227				47						1			
Lexington, Ky	35,099	10	2		1		1							
Lima, Ohio	30,508	8	1	1	3							3		
Lynchburg, Va	29,494	8			25		1				1	2		
Malden, Mass	44,404				13		1				1			
Montgomery, Ala	38,136	18	1				1					2		
Mount Vernon, N. Y	30,919		4		27		4							
Newark, Ohio	25,404	119	15		60	4	24				35	12	4	
Newcastle, Pa	36,280		3								7		2	
Newport, Ky	30,309	8					3				2	2		
Newton, Mass	39,806	13	1		40		1				1			
Niagara Falls, N. Y	30,445	6	2		1				3				1	1
Norristown, Pa	27,875	5	1		2		1				2	1	2	
Orange, N. J	29,630	17			11		1				4	2		
Pasadena, Cal	30,291	11	2								1			
Pittsfield, Mass	32,121	7	7	1			1				2	1		
Portsmouth, Va	33,190	7							2			1		
Racine, Wis	38,002	16	3				4							

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended May 4, 1912—Continued.

Cities.	Population, United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants—Contd.														
Roanoke, Va	34,874	13	1		18	1					1	2		1
Rockford, Ill	45,401	14	1				5						4	2
San Diego, Cal	39,578	4			4				1		3	3		
South Omaha, Nebr	26,259	5	1									1		
Taunton, Mass	34,259	14			5						1	1		
Waltham, Mass	27,834	9			68		1				1	1		
West Hoboken, N. J	35,403	11	2		6		3					2		
Williamsport, Pa	31,860	14	1		71							1		
Wilmington, N. C	25,748	6			3							1	1	
Woonsocket, R. I	38,125													
York, Pa	44,750		1		1						4		1	
Zanesville, Ohio	28,026	9	2				1						7	
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	5	1		36						1			
Bennington, Vt		2			4									
Biddeford, Me	17,079	4			1	1								
Braddock, Pa	17,759	7	1	1	1									
Cambridge, Ohio	11,327	3												
Camden, S. C		2												
Carbondale, Pa	17,040	5	2		12		2							
Clinton. Mass	13,075	6										1		
Coffeyville, Kans	12,687										2			
Columbus, Ga	20,554	4												1
Columbus, Ind		3							1					
Concord, N. H	21,497	9			11									
Cumberland, Md	21,839	8			35						1		5	
Dunkirk, N. Y			1											
Galesburg, Ill	20,089	6												
Harrison, N. J	14,498	3	1				2				1			
Kearney, N. J	18,659	4			3						1		3	
La Fayette, Ind	20,081	6												
Lebanon, Pa	19,240		4		2									
Logansport, Ind	19,050	6							2			1	15	1
Marinette, Wis	14,610	3					1					1	1	
Marlboro, Mass	14,577	4	1								1			
Massillon, Ohio							1							
Medford, Mass	23,156	2	1		28									
Melrose, Mass	15,715	3			15		1				2			
Moline, Ill	24,199	5					1					1		
Montclair, N. J	21,150	3			8		1				3			
Nanticoke, Pa	18,509	3												
Newburyport, Mass	19,240	4					1							
North Adams, Mass	22,012	4			5		1					1		
Northampton, Mass	19,431	7	2		5						1	1		
Ottumwa, Iowa	22,012	9												
Plainfield, N. J	22,050	1			17									
Pottstown, Pa		2										1		
Rutland, Vt	13,546										1			
Saratoga Springs, N. Y		6			1						1	1	1	
South Bethlehem, Pa	19,973	6	1		6						1	1		
Steelton, Pa	14,246	4	1		6				1		1			
Warren, Pa	11,080	3			1		1				2			
Wilkinsburg, Pa	18,294	7					1				3		1	
Woburn, Mass	15,308	4			12		1							

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

CONNECTICUT.—Month of April, 1912. Population of reporting towns, 1,129,499. Total number of deaths from all causes 1,417, including diphtheria 19, measles 28, scarlet fever 6, tuberculosis, pulmonary, 118, typhoid fever 6. Cases reported: Diphtheria 150 in 337 towns, measles 1,353 in 75 towns, scarlet fever 187 in 47 towns, smallpox 138 in 6 towns, tuberculosis, pulmonary, 161 in 46 towns, typhoid fever 40 in 13 towns.

INDIANA.—Month of March, 1912. Population, 2,700,876. Total number of deaths from all causes 3,375, including diphtheria 24, measles 6, scarlet fever 6, smallpox 3, tuberculosis 440, typhoid fever 39. Cases reported: Diphtheria 168 in 43 counties, scarlet fever 353 in 55 counties, smallpox 214 in 22 counties, typhoid fever 214 in 34 counties.

FOREIGN AND INSULAR.

CHINA.

Hongkong—Plague—Smallpox—Plague-infected Rats.

Surg. Brown reports: During the week ended April 6, 35 cases of plague with 29 deaths and 35 cases of smallpox with 24 deaths were reported at Hongkong.

During the same period 2,013 rats were examined for plague infection. Nine plague-infected rats were found.

ECUADOR.

Yellow Fever, Malaria, and Typhoid Fever.

The following statement was received from Passed Asst. Surg. Parker at Guayaquil:

Yellow fever.—This disease is extremely widespread, not only in the city of Guayaquil but throughout the surrounding country. Cases have been reported as follows:

APRIL 1-15, 1912.

	Cases remaining Apr. 1.	New cases.	Died.	Remaining Apr. 15.
Guayaquil	19	29	12	14
Duran	1	1		1
Yaguachi	1			
Milagro	1	4	3	1
Naranjito		4	2	2
Huigra	1			
Naranjal	1			

Malaria.—There are many cases of this disease in the surrounding 100 kilometers, owing to inundations during the winter season. The type is the estivo-autumnal and the medium of transmission the *Anopheles argyrotarsis.*

Typhoid fever.—This disease is more prevalent than usual both in the city and the neighboring watering places.

GREAT BRITAIN.

Liverpool—Plague from Vessel.

The medical officer of health reports the occurrence, April 27, of a case of plague in a member of the crew of the steamship *Italian Prince* which arrived at Liverpool April 19. The case ended fatally April 30.

The *Italian Prince* left Malta April 6 for Liverpool.

ITALY.

Examination of Emigrants.

Passed Asst. Surg. Robinson at Naples reports:

Vessels inspected at Naples, Messina, and Palermo, week ended Apr. 27.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
	NAPLES.				
Apr. 24	America	New York	1,655	260	2.180
24	Madonna	do	1,130	190	1,460
25	Ivernia	do			
25	Italia	do	598	75	920
26	Hamburg	do	868	130	1.250
27	Taormina	do	1.709	190	2,100
	Total		5,960	845	7,900
	MESSINA.				
Apr. 22	Ivernia	New York			
	PALERMO.				
Apr. 22	Delphine	New Orleans			
24	Ivernia	New York			
25	Teresa	do			
26	Themistocles	do			
26	Italia	do	456	400	100
27	Hamburg	do	84	80	50
	Total		540	480	150

JAPAN.

Plague on Vessel from Hongkong.

Surg. Irwin at Yokohama reports April 29 the arrival of the steamship *Tacoma Maru* at Nagasaki from Hongkong and Shanghai with a case of plague on board.

PHILIPPINE ISLANDS.

Plague on Vessels from Hongkong.

Chief Quarantine Officer Heiser at Manila reports:

The steamship *Loongsang*, from Hongkong, arrived April 2 at Manila with the body of a member of the crew dead of plague on board. The death occurred when the vessel was 36 hours distant from Manila. The case was bacteriologically verified as pneumonic plague.

The steamship *Zafiro*, from Hongkong, arrived at Manila April 4, and on April 6 a death occurred in a member of the crew. Bacteriological examination showed the death to have been due to pneumonic plague.

The following circular relative to the quarantining of steerage passengers from Hongkong has been issued:

[Circular.]

United States Treasury Department,
Public Health and Marine-Hospital Service,
Office of the Chief Quarantine Officer for the Philippine Islands,
Manila, P. I., April 6, 1912.

To the owners, agents, and masters of vessels and others concerned.

Gentlemen: In view of the increase of plague in Hongkong, I have the honor to state that, beginning April 8, 1912, all steerage passengers coming from Hongkong, or those who ordinarily travel as such, will be quarantined at the Mariveles quarantine station for a period of seven days, unless the medical officer of the United States Public Health and Marine-Hospital Service at Hongkong certifies that they have undergone such quarantine detention at that port. Masters of inward-bound ships from Hongkong should be instructed to call at Mariveles and leave such passengers and be prepared to furnish them with the necessary food while they are undergoing the quarantine detention.

Respectfully,

Victor G. Heiser,
Passed Assistant Surgeon,
Chief Quarantine Officer for the Philippine Islands.

Smallpox on Vessels.

Dr. Heiser further reports: On April 2 the United States Army transport *Warren* arrived at Manila from Chinese and Japanese ports with three cases of smallpox on board. On April 9 three additional cases developed among the crew of the *Warren*, making a total of 8 cases. During the week ended April 6, smallpox occurred on the steamships *Serantes* and *Sotolongo.*

RUSSIA.

Typhus Fever.

At Moscow Consul Snodgrass reports the occurrence of 10 cases of typhus fever with 2 deaths during the 2 weeks ended April 13.

At Odessa Consul Grout reports 13 cases with 6 deaths for the week ended April 20.

At St. Petersburg Consul Conner reports 9 cases with 4 deaths for the 2 weeks ended April 20.

SOUTH AFRICA.

Plague at Durban, Natal.

The following information was received from the department of the interior: During the week ended April 12, a fatal case of plague occurred at Durban, and during the week ended April 19, 2 cases with 2 deaths. The total number of cases reported to date is 27 with 22 deaths.

WEST INDIES.

Trinidad—Plague and Yellow Fever—Comparative Statistics.

The following statement was received from Consul Hale at Port of Spain:

Plague.—In April, 1910, 3 fatal cases of plague were reported in Trinidad. In 1911, 6 cases were reported, 1 case occurring in February, 1 in March, 2 cases in April, and 2 in May. The first case reported in 1912 occurred March 29. It was followed by 5 cases with 4 deaths occurring from April 1 to 25. From January 1 to April 26, 1912, 6,752 rats were collected in Port of Spain. Of these 5,033 were bacteriologically examined. One infected rat was found in a district adjacent to the city.

Yellow fever.—In April, 1910, 2 fatal cases of yellow fever were reported. No case has occurred since that date.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED MAY 24, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	May 24-30	4	3	
Bombay	Apr. 7-13	9	8	
Moulmine	Mar. 24-30	6	4	
Turkey in Asia:				
Aleppo	Apr. 14-20	5	4	

YELLOW FEVER.

Brazil:				
Manaos	Apr. 14-27		9	
Pernambuco	Mar. 16-31		8	
Do	Apr. 1-15		7	
Ecuador:				
Duran	April 1-15	1		
Guayaquil	do	29	12	
Milagro	do	4	3	
Naranjito	do	4	2	
Venezuela:				
La Guaira	Apr. 16-30	1	1	

PLAGUE.

Brazil:				
Pernambuco	Mar. 16-31		2	
Do	Apr. 1-15		1	
Chile:				
Iquique	Apr. 7-20	5		
China:				
Chaochowfu	Apr. 13			Present.
Hongkong	Mar. 24-30	27	21	
Do	Mar. 31-Apr. 13	71	65	
Egypt:				
Cairo	Apr. 22-25	2	1	
Provinces—				
Assiout	Mar. 23-Apr. 24	12	8	
Assouan	do	2	1	
Behera	Mar. 17-Apr. 15	1	1	
Beni Souef	Apr. 4-20	7	2	
Charkieh	Apr. 22	6	4	
Fayoum	Jan. 27-Apr. 24	2	1	
Galioubeh	Mar. 11-Apr. 23	6		
Kena	Apr. 5-24	27	22	
Menouf	Mar. 7-Apr. 23	6	1	
Minieh	Apr. 4-23	2	2	
Great Britain:				
Liverpool	Apr. 27-30	1	1	In the Royal Southern Hospital, from s. s. Italian Prince.
India:				
Bombay	Apr. 7-13	164	143	
Karachi	do	129	107	
Japan:				
Formosa	Mar. 17-30	39	38	
Nagasaki	Apr. 20	1		On the s. s. Tacoma Maru, from Hongkong and Shanghai.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended May 24, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Java:				
Pasoeroean Residency	Apr. 1-6	4	4	
Mauritius	Mar. 1-14	21	18	
Peru:				
Salaverry	Apr. 18-24	1		
Philippine Islands:				
Manila				Apr. 6, a fatal case of pneumonic form in a member of the crew on s. s. Zafiro, arrived Apr. 4 from Hongkong.
South Africa:				
Durban	Apr. 5-19	3	3	
Trinidad	Apr. 1-25		4	Not previously reported.
At sea	Apr. 1	1	1	Pneumonic on s. s. Loongsang, en route from Hongkong to Manila.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Pernambuco	Mar. 16-31		52	
Do	Apr. 1-15		54	
Canada:				
Montreal	May 4-11	1		
Ottawa	do	6		
Quebec	do	6		
China:				
Dalny	Apr. 7-13		1	
Hongkong	Mar. 24-30	20	12	
Do	Apr. 1-13	62	45	
France:				
Paris	Apr. 21-27	3		
Germany:				
Hongkong	do	1		
India:				
Bombay	Apr. 7-13	67	48	
Madras	do	8	5	
Italy:				
Leghorn	Apr. 29-May 4	4		
Naples	Apr. 21-27	3		
Palermo	Apr. 14-21	7	2	
Java:				
Batavia	Apr. 1-6	3	1	
Mexico:				
Juarez	May 5-11	1		
Mazatlan	Apr. 17-30		2	
San Luis Potosi	Feb. 25-Mar. 9	2	3	
Tampico	Apr. 1-10		1	
Philippine Islands:				
Manila—				
On arriving vessels				Apr. 1 to 6, present on the steamers Serantes and Sotolongo Apr. 2-9, 8 cases among the crew of the United States Army transport Warren, from ports in China and Japan.
Roumania	Feb. 1-29			Total: Cases, 2,912; deaths, 104.
Russia:				
Batoum	Mar. 1-31	1		
Libau	Apr. 24-28	1		
Moscow	Apr. 1-13	13		
Odessa	Apr. 14-20	1		
St. Petersburg	Apr. 7-20	35	8	
Warsaw	Feb. 25-Mar. 16	24	15	
South Africa:				
Durban	Apr. 1-6	1		
Straits Settlements:				
Singapore	do	2	2	
Switzerland:				
Cantons—				
Aargau	Apr. 7-13	1		
St. Gall	Mar. 30-Apr. 6	1		
Turkey in Europe:				
Constantinople	Apr. 22-28		16	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAY 17, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22 deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, vol. 1.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-Mar. 23	124	101	
Calcutta	Nov. 5-Mar. 23		1,001	
Madras	Nov. 26-Apr. 6	549	447	Madras Presidency Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-Feb. 29: Cases, 18,267; deaths, 11,563.
Moulmine	Feb. 18-Mar. 23	7	7	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Feb. 29	104	86	
Indo-China:				
Saigon	Nov. 20-Mar. 18	1,544	1,082	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands				Third quarter, 1911: Manila, 1, fatal case; Provinces, 27 cases and 22 deaths. Fourth quarter, 1911: Manila, no case and no death; Provinces, 22 cases, 20 deaths.
Province—				
Union	Oct. 29-Dec 4	5	5	
Roumania				Total Sept. 9-Dec. 13; Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Mar. 24		1,244	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 17, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli:	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911; Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2-Apr. 8	46	14	
Aleppo	Jan. 26-Apr. 13	41	25	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648, deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14-26	29		
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Bahia	Mar. 23-25	6	1	
Ceara	Jan. 1-Feb. 29		5	
Manaos	Nov. 19-Apr. 13		57	
Para	Mar. 3-9	2	2	Dec. 9-16: 1 fatal case.
Pernambuco	Jan. 1-Mar. 15		14	Apr. 2: Epidemic.
Rio de Janeiro	Mar. 17-Apr. 6	3	2	
Canal Zone:				
Culebra Island quarantine	Jan. 1-31	1		From a vessel from Guayaquil.
Chile:				
Tocopilla	Apr. 11	90	25	And vicinity. Apr. 20: Still present.
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Feb. 29	13	6	
Guayaquil	Nov. 16-Feb. 29	118	54	
Huigra	Feb. 1-29			1 case.
Milagro	do	16	7	
Naranjito	do	2	2	
Yaguachi	do			1 case.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb. 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida	Nov. 12-Mar. 23	20	9	Total Aug. 1, 1911-May 2, 1912: Cases, 66; deaths, 30.
Puerto Mexico (Coatzacoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
San Juan Bautista	May 11	1		
Temax	Dec. 31-Jan. 6	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 17, 1912.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Feb. 15	30		Dec. 1-30, 10 deaths, and Jan. 15-Feb. 29, 8 deaths, including previous reports.
La Guaira	Mar. 17-Apr. 1	2	2	
Macuto	Mar. 16-19	1	1	
Maiquetia	Feb. 24-Mar. 9	3	1	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
Barbados—				
Bridgetown	Apr. 27	1	1	From steamship Francis, from Para.
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manoas to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Arabia:				
Aden	Mar. 5-25	2	1	
Azores:				
Fayal	Jan. 10			Still present.
Teceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Apr. 20	24	15	
Pernambuco	Oct. 1-Feb. 29		9	
Rio de Janeiro	Nov. 12-Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12 Apr. 6	24	11	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Chaochowfu	Mar. 10-16			Present.
Hongkong	Dec. 9-Mar. 23	80	71	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases 1,817; deaths, 1,324. Dec. 31-Feb. 9: Cases, 65; deaths, 63.
Pasoeroean Residency, Malang District.	Nov. 12-Mar. 30	143	96	
Soerabaya	Oct. 17-27	2		
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Reports not available because of revolution.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Alexandria	Mar. 22	1	1	
Provinces—				
Assiout	Jan. 1-Mar. 22	50	32	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	do	29	18	
Behera	Jan. 1-Mar. 16	4	2	Sept. 11-16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16-Apr. 4	23	7	
Fayoum	Jan. 1-26	1		
Galioubeh	Jan. 1-Mar. 10	4	3	Oct. 5-Dec. 26: Case, 1.
Garbieh	Jan. 1-Mar. 17	18	8	
Girgeh	Mar. 28	1	1	
Kena	Jan. 1-Apr. 4	69	51	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2-Mar. 7	3	1	
Minieh	Jan. 1-Apr. 4	22	4	Dec. 13: Case, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 17, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 19–Apr. 6	687	601	
Calcutta	Nov. 11–Mar. 23		329	
Karachi	Nov. 26–Apr. 6	652	563	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1–6	1	1	
Rangoon	Oct. 1–Feb. 29	166	158	
Bombay Presidency and Sind.	Oct. 29–Mar. 23	58,396	42,824	
Madras Presidency	do	10,129	7,869	
Bengal	do	37,491	31,764	
United Provinces	do	86,612	76,987	
Punjab	do	10,541	8,082	
Burma	do	1,428	1,302	
Eastern Bengal and Assam	Jan. 1–Feb. 24	2	2	
Central Provinces	Oct. 29–Mar. 23	26,600	21,144	
Coorg	do	88	52	
Mysore State	do	8,631	6,688	
Hyderabad State	do	25,820	23,394	
Central India	do	9,096	7,453	
Rajputana and Ajmere Merwara.	do	1,533	1,234	
Kashmir	Feb. 3–Mar. 23	114	51	
North West Province	Oct. 29–Feb. 24	2	2	Total for India, Oct. 29–Mar. 23: Cases, 276,483; deaths, 228,848. Total year 1911: Cases, 828 535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13–Mar. 4	33	5	
Japan:				
Formosa	Mar. 7–16	13	7	
Mauritius	Nov. 3–Feb. 29	71	36	
Persia:				
Bushire	Feb. 4–Mar. 30	134	83	
Peru:				
Departments—				
Callao	Oct. 1–21	1		City, in November, 1 case; in January, 3 cases with 2 deaths; Mar. 1–26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Apr. 10, 22 cases in the lazaretto at Trujillo. Apr. 22 still present.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Sept. 21–Jan. 7	201	180	Including 73 cases and 63 deaths reported on p. 2098, Vol. I.
Siam:				
Bangkok	Nov. 4–Mar. 23		5	
South Africa:				
Durban	Jan. 14–Apr. 19			Total: Cases 27, deaths 22.
Straits Settlements:				
Singapore	Nov. 5–Mar. 16	29	25	
Turkey in Asia:				
Basra	Feb. 13	1	1	A stoker on s. s. Nicomedia from Bushire.
Jiddah	Jan. 13–Mar. 27	16	9	
Venezuela:				
Caracas	Mar. 12–Apr. 22	6	2	
West Indies:				
Trinidad	Apr. 2–May 1	6		
At sea	Mar. 1–11	1	1	On s. s. Macedonia from Bombay to Aden.

SMALLPOX.

Algeria:				
Algiers	Nov. 1–30		1	
Oran	Jan. 1–31	2	1	
Arabia:				
Aden	Nov. 28–Apr. 8	22	10	And vicinity.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 17, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Argentina:				
Buenos Aires	Jan. 1-31		2	Oct. 1-31, 6 deaths. No deaths in November or December, 1911.
Rosario	Oct. 1-Jan. 31		40	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	2		
Budapest	Jan. 4-10	25		
Galicia	Dec. 24-Apr. 13	30	1	
Krain	Jan. 14-20	7		
Trieste	Dec. 3-Apr. 6	2		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-Mar. 9	3		
Vienna	Mar. 25-30	1		
Brazil:				
Bahia	July 1-31		1	
Para	Mar. 24-Apr. 20	6	4	Case Mar. 30 from Alagoas.
Pernambuco	Oct. 1-Mar. 15		732	
Rio de Janeiro	Nov. 26-Apr. 6	31	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 16	5		
Nelson	Dec. 24-30	1		
Vancouver	Apr. 14-20	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-Apr. 20	4		
New Brunswick—				
Summerstown	Apr. 12			Epidemic; 10 miles from Cornwall.
Nova Scotia—				
Halifax	Mar. 24-Apr. 6	2		
Ontario—				
Hamilton	Apr. 14-27	16		
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-Apr. 27	99	1	
Sarnia	Oct. 17-Mar. 23	43		
Toronto	Jan. 6-Apr. 20	5	1	
Windsor	Feb. 4-Mar. 16	8		
Quebec—				
Montreal	Dec. 17-May 4	31		
Quebec	Dec. 10-Apr. 27	283	2	
Yukon—				
Dawson	Apr. 1-6	1		
Ceylon:				
Colombo	Nov. 12-Feb. 10	3		And vicinity
Chile:				
Iquique	Dec. 10-Mar. 16	4	2	
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Apr. 13	70		
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chaochowfu	Mar. 30			Present.
Chenghai	Jan. 29-Apr. 13			Do.
Chungking	Nov. 18-Apr. 6			Do.
Dalny	Mar. 3-Apr. 6	11	2	
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-Mar. 23	624	466	
Kityang	Jan. 21-Apr. 13			Do.
Nanking	Dec. 10-Apr. 20			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12-Mar. 30	52	14	
Egypt:				
Cairo	Dec. 10-Mar. 25	10	1	
Port Said	Jan. 30-Feb. 4	1		
France:				
Havre	Mar. 10-16		4	
Marseille	Jan. 1-Mar. 31		5	Nov. 1-30, 1 death.
Paris	Dec. 3-Apr. 13	120	2	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 17, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Germany				Total, Dec. 31-Apr. 27; cases, 129.
Hamburg	Jan. 21-Apr. 20	6		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
Liverpool	Mar. 17-Apr. 17	2	1	Case Apr. 13, an American from the s. s. Arabic.
London	Jan. 14-Apr. 20	10	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-Mar. 9	2		
India:				
Bombay	Nov. 19-Apr. 6	841	350	
Calcutta	Nov. 19-Mar. 23		31	
Karachi	Apr. 1-6	1	1	
Madras	Nov. 26-Apr. 6	187	72	
Rangoon	Oct. 1-Feb. 29	220	55	
Indo-China:				
Saigon	Nov. 13-Mar. 18	38	7	
Italy:				
Genoa	Dec. 1-Apr. 15	47	2	
Leghorn	Dec. 16-Apr. 27	106	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-Apr. 20	100	1	
Palermo	Nov. 26-Apr. 20	2,636	896	
Rome	Jan. 1-Mar. 31	31	3	
Turin	Jan. 15-Apr. 7	2		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Formosa	Mar. 3-16	3		
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	2	1	Jan. 20, 1 case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12-18	1		
Nogahama	Mar. 17-23	1		On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Apr. 13	8	4	
Juarez	Dec. 19-Apr. 27	16	5	
Magdalena	Dec. 23-Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-Mar. 19		11	Mar. 16, 25 cases in the lazaretto.
Mexico	Nov. 26-Mar. 23	224	101	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	Mar. 23, present in vicinity.
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Feb. 24	6	2	
Tampico	Dec. 1-Mar. 30		15	
Tapachula	Nov. 1-Jan. 31		18	
Philippine Islands				Third quarter, 1911: Manila, 9 cases; no deaths. Fourth quarter, 1911: 38 cases.
Portugal:				
Lisbon	Dec. 9-Apr. 20	56		
Roumania	Jan. 1-31	2,935	143	
Russia:				
Batum	Dec. 1-31	1		
Libau	Dec. 17-Apr. 14	2		
Moscow	Nov. 19-Mar. 30	59	9	
Odessa	Nov. 26-Apr. 6	34	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-Apr. 16	62		Oct. 1-Jan. 31; deaths, 10.
St. Petersburg	Nov. 19-Apr. 6	176	40	
Warsaw	Nov. 5-Feb. 24	390	185	
Siam:				
Bangkok	Nov. 5-Mar. 23		2,175	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 17, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-Feb. 24	4		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Barcelona	Feb. 6-Apr. 1		2	
Cadiz	Nov. 1-Mar. 31		29	
Madrid	Dec. 1-Mar. 31		16	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-Mar. 31		10	
Valencia	Dec. 3-Apr. 20	398	16	
Straits Settlements:				
Penang	Feb. 11-17	1		
Singapore	Nov. 19-Mar. 16	36	13	
Switzerland:				
Cantons—				
Oberwalden	Jan. 14-20	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Apr. 13		54	
Turkey in Asia:				
Beirut	do	1,500	107	
Turkey in Europe:				
Constantinople	Dec. 4-Apr. 21		183	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aguascalientes	May 5	40,000	98	4						3		2	8	
Aleppo	Apr. 20	200,000				4								
Amsterdam	Apr. 27	582,621	128	27									3	
Athens	do	250,010	112									2	2	
Barcelona	do	591,272	242	35								2	2	
Bordeaux	do	253,000	108	19								1	8	1
Bradford	do	289,618	78	2						1		1	2	
Batavia	Mar. 30	217,630						1						
Bombay	Apr. 13	979,445	895	41	143	8		48					12	
Brussels	Apr. 20	739,684	195	20						2		4	1	
Do	Apr. 27		192	20						2			3	1
Catania	Apr. 26	207,000	92						1		2	1	2	
Do	May 3		76	4							3			1
Cairo	Apr. 8	689,439	444	25					4	1	1	5	1	
Christiania	Apr. 20	245,000	82								1		1	
Do	Apr. 27		81	10								2	1	
Constantinople	Apr. 21	1,000,000	275	41				21		6	1	1	8	
Do	Apr. 28		271	25				16		3		3	13	
Copenhagen	Apr. 20	465,000	162	23							3	1	4	6
Dalny	Apr. 13	45,693	31	1				1						1
Do	Apr. 20		14	1							1			
Dresden	Apr. 13	555,300	147	19								2		
Dundee	Apr. 27	171,006	52	3							1		4	1

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Erfurt	Apr. 20	126,560	39	3								3		
Frankfort	Apr. 13	425,000	92								1			4
Copenhagen	..do	465,000	151	10							1		3	3
Georgetown	..do	57,577	42	2						2				
Do	Apr. 27		51	2						2				
Edinburgh	Apr. 27	321,200	102	7									10	3
Glasgow	May 2	785,600	267								2	1	6	5
Fiume	Apr. 27	51,500	20	4						1				
Ghent	Apr. 20	166,235	53	2								1		
Do	Apr. 27		44	3								1		
Gothenburg	..do	170,100	63	14										1
Gibraltar	May 5	25,367	9	1									2	
Guadalajara	May 4	119,468	122								1			
Hamburg	Apr. 20	953,079	241	36								1	2	1
Do	Apr. 27		246	22							4	7	2	1
Havre	Apr. 17	136,159	63	17							1			
Iquique	Apr. 20	40,000		7						1				
Hongkong	Mar. 30	336,488			21			12						
Karachi	Apr. 13	157,290	172		107								11	
Kharput	..do	21,000								1				
Kobe	Apr. 14	418,646	121							1				
Do	Apr. 21		119							1		1		
Konigsberg	Apr. 20	252,200	98	12										1
Leeds	Apr. 27	445,568	145	6							1	1	5	1
Leith	..do	81,000	17	1									2	
Leghorn	May 4	104,000	40											
Leipzig	Apr. 20	605,755	156	29								5	2	1
Liege	..do	166,905	58	10							1		6	2
Liverpool	May 4	752,055	277	26	[1] 1					1		3	17	6
Mannheim	Apr. 13	201,201	51	10							1			
London	Apr. 27	7,340,119	1,710							4	2	12	30	69
Madras	Apr. 13	518,660	320					5					3	
Manchester	Apr. 27	714,427	236	27						2	1	2	16	12
Matamoras	May 5	15,000	10	2										
Mazatlan	Apr. 23	22,000	20	1				1						
Do	Apr. 30		26	2				1						
Montreal	May 11	466,198	204	30						1		1		4
Moscow	Apr. 6	1,500,000	730	91					2	3	8	15	21	17
Do	Apr. 13		867	85						1	12	12	11	11
Munich	Apr. 20	610,000	178	38									1	1
Nagasaki	Apr. 14	179,257	3									1		
Nagoya	Apr. 6	424,655	161							3				
Do	Apr. 13		138									1		
Newcastle-on-Tyne	Apr. 20	269,193	79	7						1				
Do	Apr. 27		64	4							1			1
Nottingham	Apr. 20	26,000	87	8						2			11	3
Nuremberg	Mar. 30	344,797	88	11							2	1		1
Odessa	Apr. 20	575,000	180	27					6	4		2		2
Palermo	Apr. 27	340,000	130	8				2		5	2			
Paris	..do	2,888,110	1,049	253						6	7	6	39	8
Port Said	Apr. 8	25,830	34	2								2		
Port of Spain	Apr. 20	60,000	40	9						1			2	
Rotterdam	Apr. 27	438,744	119							1	2			
St. Johns, N. F	May 10	33,000										1		
St. Petersburg	Apr. 13	1,907,708	887	148				5	3	14	10	10	26	10
Do	..do		928	143				3	1	12	13	14	27	14
Salina Cruz	Apr. 27	6,138	8	2						1				
San Luis Potosi	Mar. 2	82,479	47	2				2		2				
Do	Mar. 8		59	5				1		2				
Sarnia	May 11	9,936	2							1				
Shanghai	Apr. 7	500,000	175	25							3	2	21	
Do	Apr. 14		173	24							9	1	13	
Do	Apr. 21		159	18							3	5	17	
Sheffield	Apr. 13	455,000	134	12						4	1			
	Apr. 27		146	10						1	1	2		
Singapore	Mar. 23	303,328	202	33				2						
Do	Mar. 30		176	18						3				

[1] In Royal Southern Hospital, from steamship Italian Prince.

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Smyrna	Mar. 9	400,000	75	8						2	2			
Do	Mar. 16		50	9						2				
Do	Mar. 23		69	9							1			
Do	Mar. 30		55	5										
Do	Apr. 6		63	6						3	1			
Port Said	Apr. 20	109,676	23	5										3
Do	Apr. 27		30	6										3
Stoke on Trent	do	237,153	67	7						1		1	3	
Tampico	Apr. 20	23,452	54					1						1
Tientsin	Apr. 13	465,000	30	11								1		1
Trieste	Apr. 20	235,999	108									1	3	1
Turin	Apr. 28	430,770	141	18								5		1
Vancouver	Apr. 27	110,000	23	1								1	2	
	May 4		25	1						1			1	
Vigo	Apr. 27	41,500	19	4								1		
Warsaw	Mar. 2	797,093	289	38				9		3	2	3	1	6
Do	Mar. 9		248	32				3		1	3			1
Do	Mar. 16		229	26				3		1	2	3	1	4
Valencia	Apr. 27	235,000	85	9				1			1	1		
Vienna	Apr. 13	2,081,335	677	111						1	6	9	10	7
Yokohama	Apr. 22	444,039								1				

MORTALITY—FOREIGN AND INSULAR COUNTRIES AND CITIES (Untabulated).

ARGENTINA—*Buenos Aires.*—Month of February, 1912. Population, 1,369,266. Total number of deaths from all causes, 1,799, including diphtheria 8, measles 6, scarlet fever 2, tubercolosis 190. typhoid fever 109.

BRAZIL—*Pernambuco.*—Two weeks ended March 31, 1912. Population, 225,000. Total number of deaths from all causes 474, including measles 1, plague 2, smallpox 52, yellow fever 8. Dysentery and malaria present.

Two weeks ended April 15, 1912. Total number of deaths from all causes 512, including plague 1, smallpox 54, typhoid fever 2, yellow fever 7.

GREAT BRITAIN.—Week ended April 20, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 14.5 per 1,000 of the population, which is estimated at 17,639,816.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 1,157,014. The lowest rate was recorded at Ballymena, viz, 9.2, and the highest at Dundalk, viz, 55.6, per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 16.1 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Hamilton, viz, 9.3, and the highest at Leith, viz, 23.2, per 1,000. The total number of deaths from all causes was 675, including diphtheria 8, measles 41, scarlet fever, 4.

Italy—*Genoa.*—Two weeks ended April 30, 1912. Population, 272,077. Total number of deaths from all causes 194, including diphtheria 3, measles 1, tuberculosis 38, typhoid fever 1.

Portuguese East Africa—*Lourenco Marques.*—Month of March, 1912. Population, 10,000. Total number of deaths from all causes 47, including tuberculosis 5.

Venezuela—*La Guaira.*—Two weeks ended April 30, 1912. Population, 10,000. Total number of deaths from all causes 17, including tuberculosis 3, yellow fever 1. Leprosy cases in lazaretto.

By authority of the Secretary of the Treasury:

Rupert Blue,
Surgeon General,
United States Public Health and Marine-Hospital Service

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PUBLIC HEALTH REPORTS

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STUDIES ON THE VIRUS OF TYPHUS.

By Joseph Goldberger, Passed Assistant Surgeon, and John F. Anderson, Director Hygienic Laboratory, Public Health and Marine-Hospital Service.

DURATION OF THE INFECTIVITY OF THE BLOOD.

The human inoculations by Moczutkowski (1900) and Otero (1908) strongly suggested, and those of Yersin and Vassal (1908) made it highly probable,[1] that the typhus-fever virus resides in the blood. Satisfactory proof of this, however, was not adduced until February, 1910, when Anderson and Goldberger showed that the fever induced in the monkey by an inoculation with human typhus blood, besides being transmissible by passage, conferred a definite immunity to a second inoculation.[2]

Since that time the experimental work of Anderson and Goldberger, of Ricketts and Wilder, of Gaviño and Girard, but more particularly that of Nicolle and Conseil, has developed a solid basis for the conclusion that the virus of typhus may be (or is) present in the blood, at least throughout the febrile period.

Nicolle and Conseil (August, 1910) were the first to try to determine whether the virus is present in the circulating blood before the onset of fever and after its defervescence, and from their experiments they concluded (January, 1911) that typhus blood is virulent, not only throughout the febrile period, but also before the onset of fever and at the beginning of convalescence (second day after defervescence).

In our recent work we repeated Nicolle and Conseil's experiments and have obtained results that cast grave doubt on the validity of Nicolle and Conseil's interpretations.

Before presenting our own work it will be desirable to examine Nicolle and Conseil's experiments somewhat in detail.

In order to determine whether typhus (monkey) blood is still infective after defervescence, Nicolle and Conseil inoculated a bonnet monkey (No. 31) with some blood from a chimpanzee (No. 3) obtained 36 to 48 hours after the return to normal of its temperature. After an incubation of 8 days the temperature of the bonnet monkey rose abruptly, remained up about 24 hours, then dropped, without subsequent hypothermia, but with slight emaciation. This is interpreted by Nicolle and Conseil as a typhus reaction, although when later subjected to an immunity test bonnet monkey 31 presented a well-marked reaction, showing that the fever of some 24 hours' duration, which Nicolle and Conseil interpret as a typhus reaction, had conferred no immunity.

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[1] There is some doubt whether Yersin and Vassal were really working with typhus.

[2] Nicolle's proof of the successful inoculation of his chimpanzee was the occurrence of a mild fever 24 days after inoculation and an eruption. Although the injection of 1 c. c. of the chimpanzee's blood was followed, in a bonnet monkey, by fever "with a most characteristic eruption," this was hardly convincing proof that the fever was typhus. It may be remarked in this connection that in his later work Nicolle has ceased to note the occurrence of an eruption.

With a view of testing the infectivity of the blood during the incubation of typhus, Nicolle and Conseil inoculated a bonnet monkey (No. 37) with blood from a chimpanzee (No. 4) obtained 3 days before the beginning of the fever. The result of this inoculation appeared to be absolutely negative, but when subjected to an immunity test 33 days later this animal (bonnet monkey 37) did not react. Whereupon Nicolle and Conseil conclude that the first inoculation, although followed by no symptoms, had conferred on their bonnet 37 a solid immunity.

It is evident that Nicolle and Conseil's conclusions that the blood is infective after defervescence and during the prefebrile period depend on the validity of their interpretations of the two experiments just cited.

The validity of their interpretation of the first of the above experiments is clearly involved in the question of what constitutes a typhus reaction. We defer a full discussion of this question to a later paper. At this time we wish simply to state that we are convinced that in the present state of our knowledge it is not permissible to interpret as a typhus reaction in the monkey a fever that confers no immunity.

In the second of the two experiments cited Nicolle and Conseil base their interpretation on the outcome of the immunity test; as this was negative they conclude that the animal, though it had presented no symptoms, was vaccinated by the injection with the blood obtained from chimpanzee No. 4.

It is obvious that in this case Nicolle and Conseil disregard the possibility of a natural immunity in the monkey. This possibility is not as remote as the early workers, including ourselves, believed. We have met with it several times in our recent work. Instances will be cited in other portions of this paper, although we shall defer a full discussion of this important matter to a later communication. For our present purpose it will be enough to say that in several instances in our recent experience monkeys have resisted one or two inoculations with virulent blood or blood serum and yet have reacted sharply and characteristically to the second or the third.

From the foregoing discussion it is clear that Nicolle and Conseil's conclusions are not justified by the results of their experiments when these are strictly interpreted.

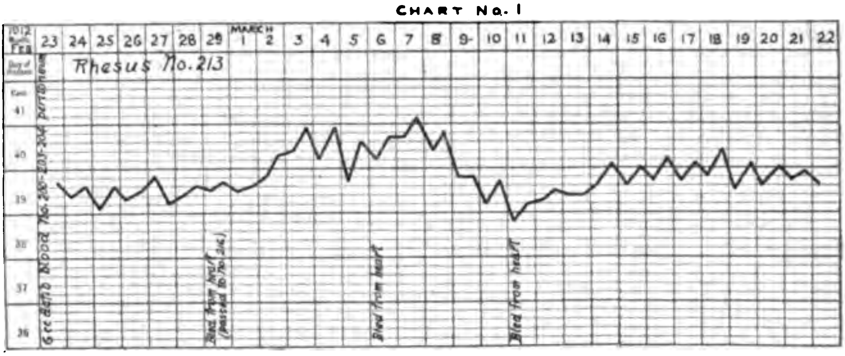
Our own experiments follow:

Experiment No. 1.

At 12 m., February 29, about 32 hours before the beginning of a well-marked typhus reaction, we aspirated blood from the heart of rhesus No. 213 (chart 1) and after defibrination injected 8 c. c. of it diluted with 4 c. c. of saline solution into the peritoneal cavity of rhesus No. 216.

Result: During a period of observation of 30 days rhesus No. 216 failed to give any evidence of a reaction. At the end of this period he was subjected to an immunity test consisting of an intraperitoneal injection of 3 c. c. of defibrinated blood, obtained from monkeys Nos. 232 and 233, diluted with 2 c. c. of saline solution. To this test rhesus No. 216 reacted promptly and characteristically.

It appears, therefore, that monkey No. 216 was neither infected nor vaccinated by the inoculation with the blood of No. 213. This result would seem to justify the interpretation that the blood obtained from rhesus No. 213 about 32 hours before the beginning of fever was not virulent. This interpretation, though probably correct, is not permissible, in view of our experience that the normal monkey may resist one or two or more inoculations with virulent blood.

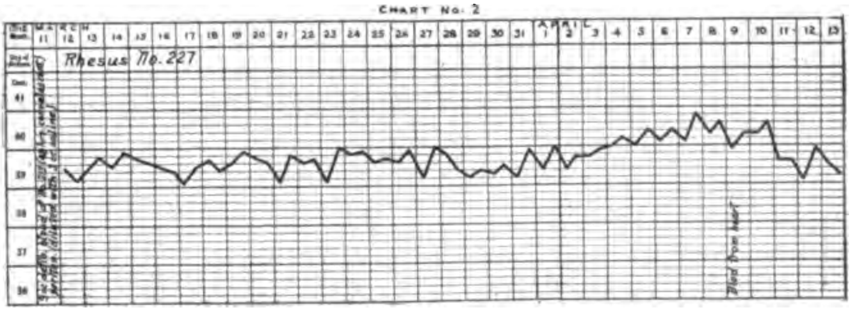


Temperature curve of rhesus No. 213.

Experiment No. 2.

At 3.50 p. m., March 11, 1912—that is, at least 24 to 32 hours after the temperature of rhesus No. 213 reached normal—we again drew blood from this animal's heart and after defibrination, 9 c. c. of it diluted with 3 c. c. of saline solution was injected intraperitoneally into rhesus No. 227.

Result.—After an incubation period of about 24 days this monkey developed a mild fever of about 7 days' duration, which is sufficiently definite to justify us in considering it a typhus reaction (chart 2).



Temperature curve of rhesus No. 227. Mild febrile reaction following inoculation with blood obtained in beginning of convalescence.

The mild reaction obtained in rhesus No. 227 following inoculation with blood obtained at least 24 to 32 hours after the temperature of rhesus No. 213 reached normal justifies the interpretation that this blood was infective.

CONCLUSIONS.—From the foregoing discussion and the results of our experiments the following conclusions seem to us permissible:

1. The blood of the monkey infected with typhus may be virulent in the prefebrile stage, but no satisfactory evidence of that fact has as yet been adduced.

2. The blood of the monkey may still be virulent 24 to 32 hours after the return of the temperature to normal.

THE SEAT OF THE VIRUS OF TYPHUS.

The demonstration of the presence of the typhus virus in the circulating blood naturally leads one to inquire as to the element of the blood in which it resides. Nicolle and Jaeggy (April, 1910) were the first to consider this problem. In their hematologic study of typhus they describe a peculiar necrosis of the polynuclears which they consider significant as regards the seat of the unknown infectious agent, an agent which they therefore think is probably an intraleucocytic parasite.

Somewhat later Nicolle, Conor, and Conseil (October, 1910) point out certain apparent differences between the infectivity of typhus blood serum obtained after centrifugation of defibrinated blood and that obtained after clotting. These differences appear to them to support the intracellular hypothesis first suggested by Nicolle and Jaeggy.

In a later paper (January, 1911) Nicolle, Conor, and Conseil write that if the hypothesis of the intracellular character of the virus be accepted—

> the discordant results of inoculation with serum obtained by centrifugation of defibrinated blood and that obtained after coagulation are easily explained. The former is always virulent because no matter how rapid and perfect the centrifugation may have been, it is bound to contain cellular débris and organisms liberated by the destruction of cells in the act of defibrination. The serum obtained after coagulation is, theoretically, deprived of all virulence for the monkey because it is freed of most of the liberated organisms and almost completely of the suspended cells by the formation and retraction of the clot.

They add, however, that—

> the absence of virulence of the serum obtained after coagulation may not be absolute. When the serum does not separate well from the clot and when for that reason it contains a certain number of cells or when the amount inoculated is large the infection of the monkey may be realized.

In still a later paper (September, 1911) Nicolle, Conor, and Conseil report experiments especially designed to test their hypothesis. They consider that the results of these experiments support the theory of intraleucocytic localization.

On account of the great importance of the question involved it seems desirable to examine these experiments in detail. They are as follows:

A. COMPARATIVE VIRULENCE OF THE VARIOUS ELEMENTS OF THE BLOOD SEPARATED BY CENTRIFUGATION.

Experiment 1.—The blood used was drawn by venepuncture of patient 120 in the seventh day of a severe typhus, to which was added some sodium citrate, centrifugated,[1] etc. The manipulation of separation and lavage of the different elements of the blood took three-quarters of an hour.

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[1] Just as we were about to go to press Nicolle, Conor, and Conseil's paper (Apr. 25, 1912) came to our hands, from which we cite the following additional details of this experiment: "After centrifugation (lasting 12 minutes) we at once removed several cubic centimeters of plasma from the upper portion of the tubes. The leucocyte layer was carefully removed and put in saline solution; several cubic centimeters of red corpuscles were then removed from the deepest portion of the tubes and placed in some of the same solution. These manipulations required 22 minutes. After that the white and the red globules suspended in saline solution were submitted to a second centrifugation of 10 minutes duration. This done, it required 6 minutes more to separate the cells from the liquid in which they were washed."

Seven bonnet monkeys were inoculated intraperitoneally as follows: A fresh control and two immunes each with 5 c. c. of the fresh blood; monkey A with the same dose of citrated blood; monkey B with the same dose of citrated plasma; monkey C with 2.5 c. c. of red corpuscles; monkey D with 1 c. mm. of the leucocyte layer.

The results were as follows: Fresh control (fresh blood), incubation 16 days, typhus of median severity of 12 days' duration (the temperature was over 40° during 6 days); immunes (fresh blood), negative. A (citrated blood), incubation 12 days, typhus of median severity of 9 days' duration (the temperature was over 40° during 9 days); B (citrated plasma), incubation 8 days, duration 9 days (6 days above 40°); C (red corpuscles), incubation 13 days, typhus abortive of 5 days (3 days at 40°, of which only one above); D (white corpuscles), incubation 6 days, typhus grave of 9 days (9 days above 40°).

Experiment No. 2.—Performed under the same conditions as No. 1 with the blood of patient 69 in the thirteenth day of a severe attack. Separation of the various elements of the blood took 30 minutes and was more perfect than in the first experiment. Three bonnet monkeys were inoculated intraperitoneally as follows: Monkey E with 5 c. c. of citrated plasma, F with the same dose of red corpuscles, G with about 1 c. mm. of leucocytes.

The results were as follows: E (citrated plasma), incubation 13 days, mild typhus of 7 days' duration (3 days above 40°); F (red corpuscles), negative; G (white corpuscles), incubation 7 days, severe typhus of 11 days (temperature above 40° during 9 days). Tested 67 days after the first inoculation by the intraperitoneal injection of 5 c. c. of blood from a monkey in the fifth day of an experimental attack; E and G have not reacted, F developed a severe typhus of 8 days after an incubation of 11 days.

B. NONVIRULENCE OF BLOOD SERUM FREED OF ITS CELLULAR ELEMENTS BY CENTRIFUGATION.

Serum obtained after clotting is, theoretically at least, free of cells. These remain entangled in the clot as it retracts; prolonged centrifugation frees it of such formed elements as it may contain. It is easy therefore to obtain a serum free of all white corpuscles. If our hypothesis as to the localization of the typhus virus in these cells is correct, such a liquid will be inoffensive. The experiment performed on man shows that it is so.

One of us received intravenously 1 c. c. of blood serum from a monkey in the third day of typhus seven hours after the blood was drawn; result negative. A previous experiment had shown us that the blood serum has no microbicidal action in vitro on the typhus virus.

C. NONVIRULENCE OF THE CEREBROSPINAL FLUID.

This liquid, destitute of all cellular elements, possesses no virulence.

"A bonnet monkey inoculated intraperitoneally with 15 c. c. of cerebrospinal fluid of patient 28 in the ninth day of a severe attack has presented no symptoms: tested 14 days later by an intraperitoneal inoculation of 5 c. c. of blood of a monkey in the fifth day, this monkey developed a fever of 7 days duration after an incubation period of 12 days."

From these experiments Nicolle, Conor, and Conseil draw the following conclusions:

1. Of the various elements of the blood separated by centrifugation the leucocytes are the most virulent; a minimal dose of these cells promptly determines in the monkey a grave infection.
2. The plasma, less active, seems to owe its virulence only to the leucocytes or leucocytic débris, of which it is difficult to free the plasma completely; the washed red cells are not virulent.
3. Centrifugated blood serum is inoffensive for man and a humor destitute of cells; the cerebrospinal fluid is equally inactive.

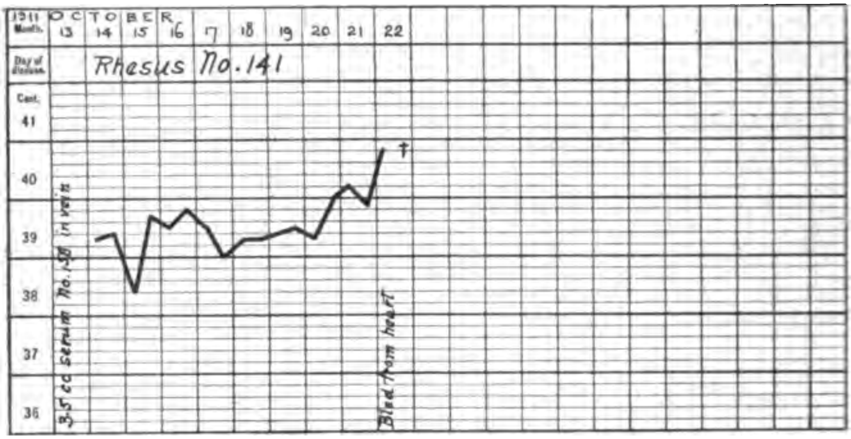
Before discussing the foregoing experiments and conclusions we desire to detail some pertinent experiments of our own.

Experiment No. 3.

On October 13, 1911, some defibrinated blood from rhesus No. 158, then in the first day of a typhus reaction, was centrifugated for about 30 minutes, after which the clear supernatant serum was pipetted off. With some of this serum two rhesus monkeys were inoculated. No. 141 received 3.5 c. c. intravenously; No. 142 received 0.5 c. c. subcutaneously and 4 c. c. intraperitoneally.

Result: Rhesus No. 141 developed a sharp reaction 7 days after the inoculation (chart 3); but during a period of observation of 29 days rhesus No. 142 gave no evidence of a reaction. At the end of this period No. 142 was subjected to an immunity test consisting of an intravenous injection of 2.5 c. c. of defibrinated blood of rhesus No. 163, to which he responded promptly and sharply. (Chart 4.)

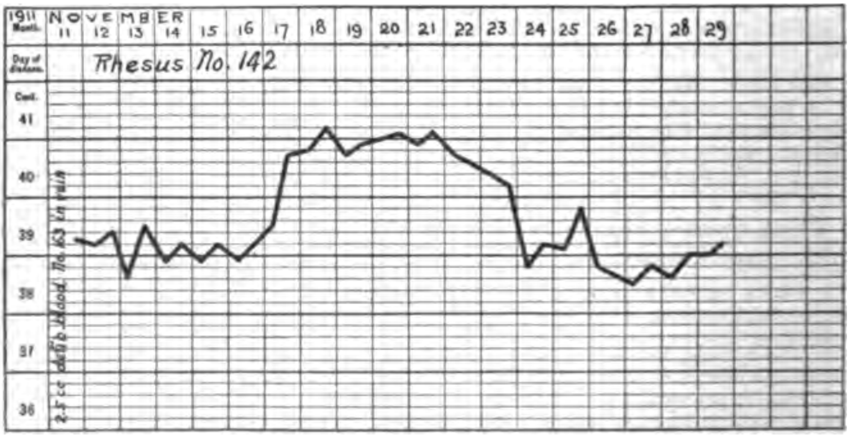
CHART NO. 3



Temperature curve of rhesus No. 141, showing first three days of typhus reaction following inoculation with blood serum.

Although one of the two animals inoculated (with the larger dose) did not respond and was not vaccinated, it is clear that the blood serum of rhesus No. 158 was infective.

CHART NO. 4



Temperature curve of rhesus No. 142, showing reaction to immunity test.

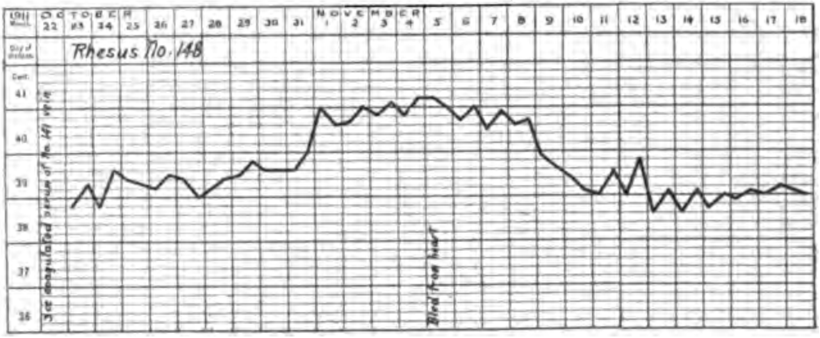
Experiment No. 4.

On October 22, 1911, blood was drawn from rhesus No. 141, then in the third day of a marked attack of experimental typhus (chart 3), and allowed to clot in a tube. After 3 hours, in order to separate the serum more thoroughly from the clot, the tube was centrifugated for about 15 minutes. After drawing off the clear straw-tinted serum, a portion of it was used for the inoculation of two monkeys. No. 147 was given

4.5 c. c. and No. 148, 3 c. c., both intravenously. The time that elapsed between drawing the blood and inoculating was about 3 hours and 20 minutes.

Result: During a period of observation of 29 days rhesus No. 147 gave no evidence of a reaction. Rhesus No. 148, however, after an incubation period of about nine days, developed a severe typhus, as shown by marked fever (chart 5) and successful passage to another monkey. It should be noted that, although rhesus No. 147 and rhesus No. 148 were of substantially the same size and vigor, yet rhesus No. 147—the one that received the larger dose (larger by 50 per cent)—failed to react, and when subjected to an immunity test, consisting of a subcutaneous injection of about 0.5 c. c., and of an intravenous injection of 2 c. c., of defibrinated blood of rhesus No. 166, then in the third day of an experimental typhus, rhesus No. 147 reacted promptly and sharply (chart 6).

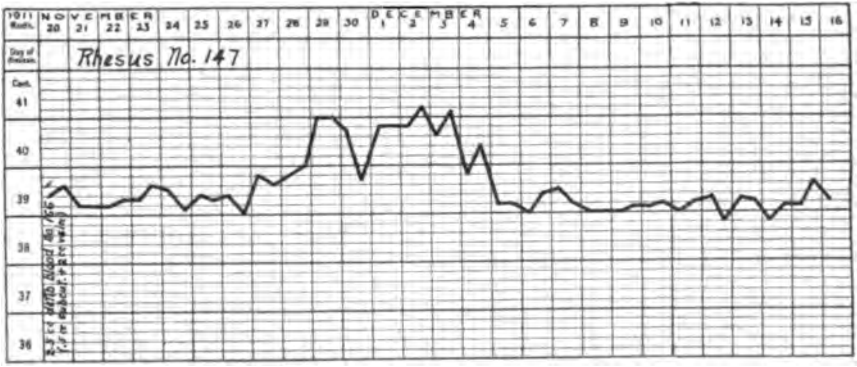
CHART NO. 5



Temperature curve of rhesus No. 148, showing severe febrile reaction, following inoculation with blood serum.

Although one of the two animals inoculated (with much the larger dose) did not become infected nor immunized, it is evident that the blood serum of rhesus No. 141, obtained after clotting and centrifugation, was infective.

CHART NO. 6



Temperature curve of rhesus No. 147, showing reaction to immunity test.

Experiment No. 5.

On March 6, 1912, blood was aspirated from rhesus No. 210 and No. 213. The former was in the seventh and the latter in the fifth day of an experimental typhus. The blood was allowed to clot in tubes and, as in Experiment No. 4, after standing three hours it was centrifugated in order better to separate the serum from the clot. The serum was then pipetted off and mixed. Of this serum, 6 c. c. were intraperitoneally injected into rhesus No. 221.

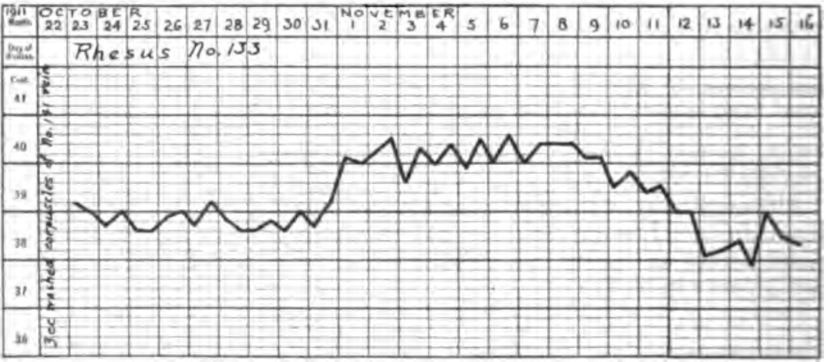
Result: During a period of observation of 24 days following this inoculation monkey No. 221 manifested no recognizable symptoms of a reaction. He was therefore reinoculated March 30 in order to test his immunity; for this purpose he was given an intraperitoneal injection of 3 c. c. of virulent defibrinated blood (rhesus Nos. 232 and 233). Twenty-one days later, April 20, not having in the meantime given any indications of a reaction, he was again given an intraperitoneal injection of 3 c. c. of virulent defibrinated blood (rhesus No. 225). So far this monkey has given no recognizable evidence of a reaction following this inoculation.

The results of the repeated immunity tests of rhesus No. 221 would seem to indicate that this animal was vaccinated by the first inoculation with 6 c. c. of serum; we think it more probable, however, that this is an instance of natural immunity in this monkey.

Experiment No. 6.

On October 27, 1911, some blood drawn from rhesus No. 141 (chart 3) was defribrinated and 3 c. c. of it tubed and centrifugated. After a centrifugation of about 15 minutes the serum was pipetted off and replaced by 5 c. c. of saline solution in which the corpuscles were thoroughly stirred up. The tube was then again put in the centrifuge for 15 minutes, after which it was taken out and the supernatant liquid pipetted off and replaced by 5 c. c. of fresh saline solution. This maneuver was twice repeated. In other words, the corpuscles were washed three times in an excess of saline solution. After the third washing the corpuscles, in fresh saline solution, representing originally 3 c. c. of defibrinated blood, were injected intravenously into rhesus No. 133.

CHART No. 7



Temperature curve of rhesus No. 133, showing reaction following inoculation with washed corpuscles.

Result: After an incubation period of about 10 days this monkey developed a marked typhus reaction (chart No. 7).

Washing the blood corpuscles three times in an excess of saline solution had, therefore, not deprived them of the power to infect.

Experiment No. 7.

On February 12, 1912, we aspirated blood from three monkeys—Nos. 196, 198, and 322—that were in the fourth, fifth, and sixth days, respectively, of experimental typhus. The blood was defibrinated and mixed. The corpuscles of 12 c. c. of this mixed defibrinated blood were washed three times, as in experiment No. 6. After the third washing the supernatant liquid was drawn off and discarded; then the surface layer ("cream" or leucocyte layer) of corpuscles was pipetted off and injected intraperitoneally into rhesus No. 206. Of the corpuscles remaining, 3 c. c. were intraperitoneally injected into rhesus No. 207.

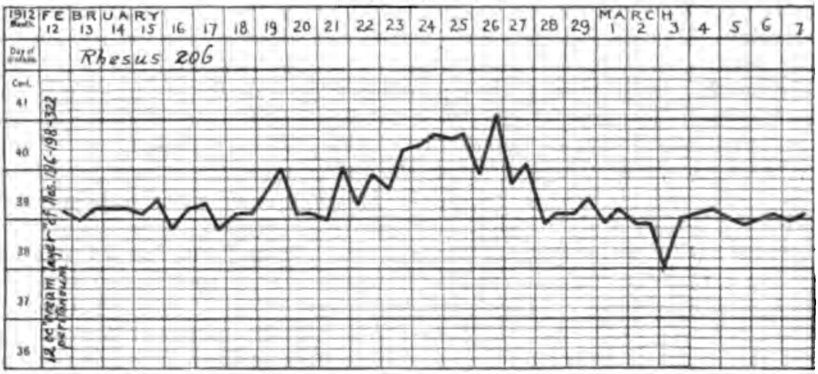
Result: Both monkeys developed well-marked reactions after an incubation period of seven days in No. 206 and eight days in No. 207. Although the reaction in neither was severe, that in No. 207 was perhaps the somewhat better marked (charts 8 and 9).

Both the "cream" or leucocyte layer and the red[1] corpuscles of washed blood were, therefore, infective

DISCUSSION.—Nicolle, Conor, and Conseils's interpretations are evidently based on the assumption that the severity of the reaction is a direct index of the virulence of the infecting dose.

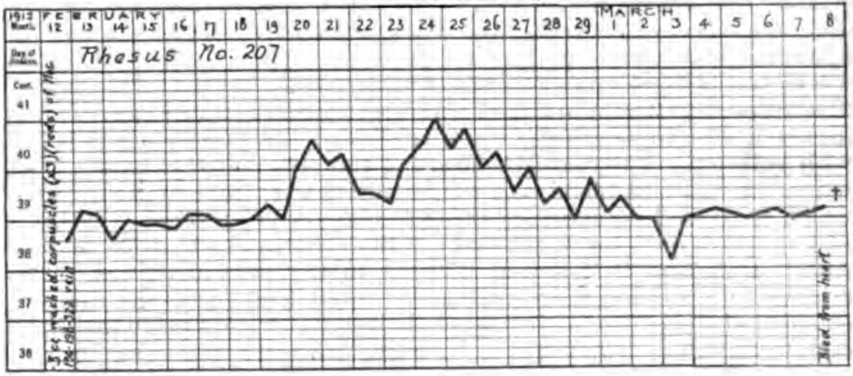
If this assumption were permissible it would be difficult to say from the character of the reaction noted by us in rhesus No. 206 and No. 207 (charts 8 and 9) which was the more virulent, the "cream" layer given to No. 206 or the "reds" given to No. 207. As a matter of fact,

CHART No. 8



Temperature curve of rhesus No. 206, showing reaction following an inoculation with leucocyte layer of washed corpuscles.

CHART No. 9



Temperature curve of rhesus No. 207, showing reaction following an inoculation with washed "red" corpuscles.

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[1] Although centrifugation separates the white and the red corpuscles, this separation is never complete. A considerable number of leucocytes are always carried down by the reds from which they can not be completely removed, even by repeated washings and repeated removal of the "cream" layer. So that when we speak of the "reds" it must always be understood that a not inconsiderable number of whites are included. This is well illustrated by the following experiment, kindly made for us by our colleague, Dr. Leake: Some typhus monkey blood was citrated and then centrifugated for one hour. After this the serum and the cream layers were pipetted off and the remaining "reds" washed three times. After each washing the "cream" layer that formed was discarded. Leucocyte counts were made as follows: (1) Citrated blood before centrifugation, 7,000 per c. mm.; (2) plasma after centrifugation of 1 hour, less than 10 per c. mm.; (3) "cream" layer after centrifugation of 1 hour, 79,000 per c. mm.; (4) "reds" after centrifugation 1 hour and after removing the "cream," 14,000 per c. mm.; (5) "reds" after washing three times and each time discarding the "cream" layer, 9,000 per c. mm. After an hour's centrifugation, therefore, the plasma of citrated blood was not freed of leucocytes and the number of leucocytes among the "reds" was relatively increased.

there does not appear to be any necessary relation between dosage and severity of reaction.

Ricketts and Wilder (Feb. 5, 1910) and Anderson and Goldberger (Feb. 18, 1910), almost simultaneously record observations to this effect over two years ago. We have an extreme and a very pertinent illustration of this in the result above detailed of our experiment No. 4 in which, of two animals of equal size and vigor inoculated with typhus blood serum, the monkey that received the smaller dose presented a severe reaction while the monkey that received the larger dose (by 50 per cent) failed altogether to react although a month later he reacted promptly and sharply to an immunity test with a relatively small amount of defibrinated blood. But waiving this objection and accepting their interpretation that "of the various elements of the blood separated by centrifugation the leucocytes are the most virulent," "the plasma less active," "and the washed corpuscles not virulent," ("not virulent" in the sense, it is presumed of "low virulence," for in one of their experiments under "A" the "reds" which necessarily entangled some leucocytes, were infective, as they were also in our experiment No. 7), it does not seem to us necessarily to follow that because the degree of virulence of the various elements of the blood thus separated appears to run parallel [1] with their (incorrectly) assumed richness in leucocytes that the virus is localized in the leucocytes or has any relation to the leucocytes other than that of possessing, possibly, a specific gravity approximating, or identical with, that of these cells.

In other words, having due regard for the mechanics of centrifugation, one might reasonably expect that the distribution in the different layers of centrifugated blood of an extracellular parasite of approximately the same specific gravity as that of the leucocytes would be similar to, or identical with, that of the latter. This is well illustrated by the following experiment. Some blood was drawn into sodium citrate solution from the heart of a guinea pig infected with anthrax. A measured amount of this was plated in agar. The remaining citrated blood was then centrifugated for one hour, after which measured amounts of the different layers, plasma, "cream," and "reds," uniform with that of the whole blood, were plated. After incubating 18 hours at 37° the plates were examined. The dilutions not having been sufficient to permit counting the colonies on some of the plates, estimates of their number were made and then certain relative values given to each, with the following result: "Whole blood," 100; "plasma," 1; "cream," 10,000; "reds," 10. Here we have an enormous excess of organisms in the leucocyte layer and a great reduction in the plasma and in the "reds." The reason for the high virulence of the leucocytic layer, the lessened activity of the plasma and the "nonvirulence"[2] of the washed red corpuscles is therefore obvious.

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[1] As a matter of fact, there is no evidence to show that it really does, for the leucocyte content of the various "elements" of the blood separated by centrifugation, is in the following order: "Cream," "reds," plasma (see note, Experiment No. 7).

[2] Nicolle, Conor, and Conseil say: "Des divers éléments du sang, séparés par centrifugation, les globules blancs sont en effet les plus virulents; une dose minime de ces cellules détermine chez le singe une infection rapide et grave; le plasma, moins actif, semble ne devoir sa virulence qu'aux leucocytes ou débris leucocytaires dont il est malaisé de le débarrasser complètement; les globules rouges lavés n'ont pas de virulence."

We presume that by "n'ont pas de virulence"—have no virulence—they mean "low virulence," for in one of their experiments under "A" the "reds" were infective. A literal interpretation of this phrase would make their argument in favor of an intraleucocytic localization absurd, for the "reds" necessarily entangle a not inconsiderable number of leucocytes as they are precipitated by the centrifuge.

If now we bear in mind that the severity of the reaction does not necessarily correspond to the degree of virulence (dosage), even though it may do so under certain circumstances, then we believe we have accurately reproduced in this experiment with anthrax blood the results obtained by Nicolle, Conor, and Conseil after centrifugation of citrated typhus blood.

In view of the foregoing it is easy to conceive that typhus blood serum may by sufficient centrifugation be made noninfective even to so (supposedly) sensitive a subject as man. On account of the variable susceptibility of the monkey, very little significance can be attached to the negative result of the single inoculation with cerebrospinal fluid. It does not prove that this fluid is not infective, although it is in harmony with the result of a human experiment made by Otero in 1908. But even if it did, to have the significance that Nicolle, Conor, and Conseil seem to attach to it, it would be necessary to show, first, that the cerebrospinal fluid of typhus is quite free of leucocytes, and second, that in infections due to an extracellular parasite this fluid is invariably virulent.

Conclusions.—From the foregoing discussion we believe it permissible to conclude: (1) That the evidence adduced by Nicolle, Conor, and Conseil does not especially favor their hypothesis of an intraleucocytic localization of the virus of typhus. On the contrary, the infectivity of centrifugated blood serum, obtained after clotting, with its low leucocyte content would be in favor of a parasite free in the circulating plasma of the blood; (2) that the blood serum of virulent typhus blood is constantly infective, whether obtained from defibrinated blood or after clotting, instances of its apparent avirulence being explicable by a natural resistance of the monkey; (3) that it may perhaps be possible to deprive typhus blood serum (obtained after clotting) of its virulence by prolonged centrifugation, but that this does not necessarily indicate an intraleucocytic localization of the virus; and (4) that repeated washings of the blood corpuscles do not deprive them of their infectivity, a fact explicable by the physical phenomena involved in centrifugation.

FILTERABILITY.

VIRUS IN THE BLOOD.

The question of the filterability of the virus as it exists in typhus blood has been studied by several groups of workers. Ricketts and Wilder were the first to come forward with an answer to this question. On February 5, 1910, they reported a filtration experiment. In this a monkey inoculated with filtered (Berkefeld candle) blood serum (from defibrinated blood) failed to react. Almost simultaneously Goldberger and Anderson (Feb., 18, 1910) reported a similar experiment with a like result. In a paper published some weeks later (Apr. 23, 1910) Ricketts and Wilder report apparently the same result from a second experiment.

In October, 1910, Nicolle, Conor, and Conseil reported two series of experiments with filtered serum (from clotted blood) on monkeys and a third on man. In the first, one of the two monkeys that had received the filtered serum gave no indications of a reaction; the other (bonnet 47) presented an elevation of temperature of 0.5 degree between the sixteenth and eighteenth day,[1] so that the result was doubtful. When later subjected to an immunity test bonnet 47 proved refractory, from which they conclude that the subcutaneous inoculation of filtered typhus serum produced in this monkey a feeble thermic reaction (doubtful), which, however, conferred an absolute immunity to a subsequent immunity test.

In the second series of their experiments neither the monkey that received the unfiltered serum nor the three monkeys that received the big doses of the filtered serum presented the slightest indications of a reaction.

In a third experiment one of the authors submitted himself to a subcutaneous injection of 0.25 c. c. of filtered typhus serum without developing any symptoms.

After reviewing the results of filtration recorded by Ricketts and Wilder and by Anderson and Goldberger, Nicolle, Conor, and Conseil (January, 1911) conclude "that the serum obtained by centrifugation of defibrinated blood is always inactive after filtration; that the serum obtained after coagulation is generally also inactive after filtration, but not constantly so; and that the only hypothesis that permits of an explanation of these facts is that under ordinary conditions the unknown microbe of typhus is present in the filtrate in numbers too small to cause infection or immunization of the inoculated animal. This microbe is therefore filterable and probably intraleucocytic." It should here be noted that this was written before the result of the immunity test of the monkey used in the second of Ricketts and Wilder's filtration experiments was published. This result appeared in a paper published by Wilder in July, 1911, and showed that as in one of Nicolle, Conor, and Conseil's experiments the monkey that had received the injection of filtered (defibrinated blood) serum was resistant to the immunity test.

In September, 1911, Nicolle, Conor, and Conseil reported still another filtration experiment. Believing that the virus is intraleucocytic they thought "that it would perhaps be possible to obtain, by the artificial disintegration of a large number of these cells, enough free organisms so that their filtered emulsion would infect the monkey." This, however, did not prove to be the case and they conclude that "in this instance, again, the number of organisms that passed the filter was undoubtedly insufficient," so that their "previous positive filtration experiment remains unique." They are evidently still ignorant of Ricketts and Wilder's "positive" (?) result.

In November, 1911, Gaviño and Girard published some studies in typhus, in which they report an absolutely negative result following inoculation of a monkey with filtered (through a Berkefeld candle) peritoneal exudate rich in erythrocytes and leucocytes, particularly polynuclears. This was obtained from the peritoneal cavity of a monkey at the height of an experimental typhus three hours after injecting some peptonized broth.

Summarizing the foregoing, we have eight attempts, so far recorded, to pass the virus of typhus through a Berkefeld filter. Of these, six were negative; in one of the other two (Wilder, 1911) the monkey that had been inoculated with the filtrate, without giving any evidence of a reaction, was later found to be resistant to an immunity test with virulent blood; in the other (Nicolle, Conor, and Conseil, January, 1911), one of a pair of monkeys inoculated with some of the filtrate is described as having presented a doubtful reaction, and later was found resistant to an inoculation with virulent blood.

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[1] In their summary January, 1911, this is stated as "0.5° to 0.8° between the fifteenth and twenty-first day."

Before discussing these results and their significance, we desire to record some new experiments of our own.

Experiment No. 8.

On October 13, 1911, some blood was drawn from rhesus No. 158, then in the first day of a severe experimental typhus. After defibrination this blood was centrifugated for about half an hour, after which the supernatant serum was pipetted off. A portion of the serum was diluted with three volumes of saline solution and then passed through a Berkefeld candle, after which the following inoculations were made: Of the unfiltered serum rhesus No. 141 was given 3.5 c. c. intravenously and rhesus No. 142, 4 c. c. intraperitoneally and 0.5 c. c. subcutaneously. Of the diluted filtered serum rhesus No. 143 was given 8.5 c. c. (representing 2.12 c. c. of the original) intravenously and 6 c. c. (representing 1.5 c. c. of the original) intraperitoneally; rhesus No. 144 was given 9.5 c. c. (representing 2.4 c. c. of the original) intravenously and 5 c. c. (representing 1.25 c. c. of the original) intraperitoneally.

Result: Rhesus No. 141 (unfiltered serum), after an incubation period of 7 days, developed a sharp reaction (chart 3), on the third day of which he was sacrificed in the act of aspirating blood for passage. Rhesus No. 142 (unfiltered serum), 143 (filtrate), 144 (filtrate), during a period of observation of 29 days gave no evidence of a reaction. At the end of this period these three monkeys were subjected to an immunity test, each receiving intravenously 2.5 c. c. of defibrinated blood of rhesus No. 163, then in the second day of a marked experimental typhus. All three animals responded promptly and sharply to this test (chart 4).

It appears, therefore, that of the two monkeys (Nos. 141 and 142) that were inoculated with virulent typhus serum obtained after a half hour's centrifugation of virulent defibrinated blood (virulent for two monkeys in a dose of 3.5 c. c. each, intravenously) one (the one receiving the larger dose) failed to react without being refractory to the immunity test and that neither of the two monkeys inoculated with the filtered serum was either infected thereby or had any resistance conferred upon it.

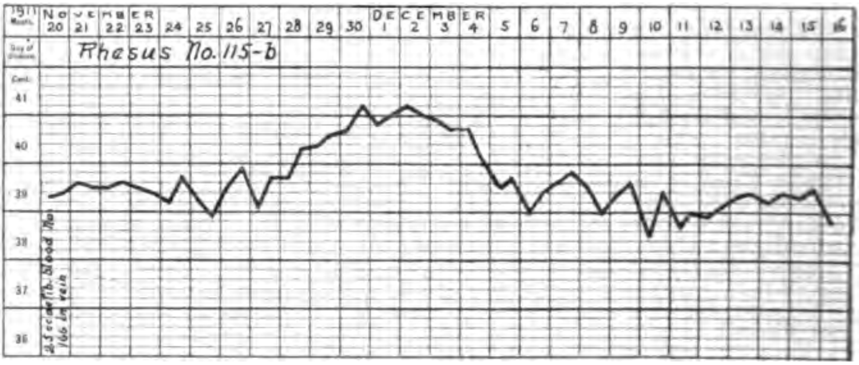
Experiment No. 9.

On October 22, 1911, blood was drawn from the carotid of rhesus No. 141, at this time in the third day of a marked attack of experimental typhus, and allowed to clot in a tube. At the end of 3 hours the tube was centrifugated for about 15 minutes in order to separate the serum more thoroughly from the clot. After drawing off the clear straw-tinted serum a portion was diluted with 3 volumes of saline solution and passed through a Berkefeld filter, after which the following inoculations were made: Of the unfiltered serum, rhesus No. 147 was given 4.5 c. c. and No. 148, 3 c. c., both intravenously. Of the dilute filtered serum rhesus Nos. 115*a* and 115*b* were each given 10 c. c. (representing 2.5 c. c. of undiluted serum) intravenously and 2 c. c. (representing 0.5 c. c. of undiluted serum) intraperitoneally.

Result: As already stated in a previous connection, rhesus No. 148 (3 c. c. serum) developed a severe typhus reaction after an incubation period of about 9 days (chart 5). Rhesus No. 147 (4.5 c. c. serum), No. 115*a* (3 c. c. filtered serum), No. 115*b* (3 c. c. filtered serum) during a period of observation of 29 days following the inoculation, presented no recognizable evidence of a reaction. At the end of this period of observation monkeys Nos. 147, 115*a* and 115*b* were subjected to an immunity test consisting of an inoculation of defibrinated blood of rhesus No. 166 then in the third day of a marked experimental typhus, No. 147 receiving 2 c. c. intravenously and 0.5 c. c. subcutaneously, No. 115*a* 2.5 c. c. subcutaneously, and No. 115*b* 2.5 c. c. intravenously. Rhesus Nos. 147 and 115*b* reacted promptly and sharply to this test (charts 6 and 10). No. 115*a*, however, gave no evidence of a reaction during a period of 33 days following this test. Sixty-two days after the inoculation with the filtered serum rhesus No. 115*a* was given a second immunity test consisting of an inoculation, part intravenous and part subcutaneous, of 2.5 c. c. of virulent defibrinated blood of rhesus No. 176, then in the second day of a marked attack. Twenty-eight days later, or 90 days after the inoculation with filtered serum, having failed to react to the second test, this animal was subjected to a third immunity test consisting of an intravenous inoculation of 3.5 c. c. of mixed defibrinated blood from rhesus Nos. 308 and 309, both of which were then in the second day of marked experimental attacks.

Following this inoculation rhesus No. 115*a*, after an incubation period of 8 days, developed a well-marked typhus reaction (chart 11).

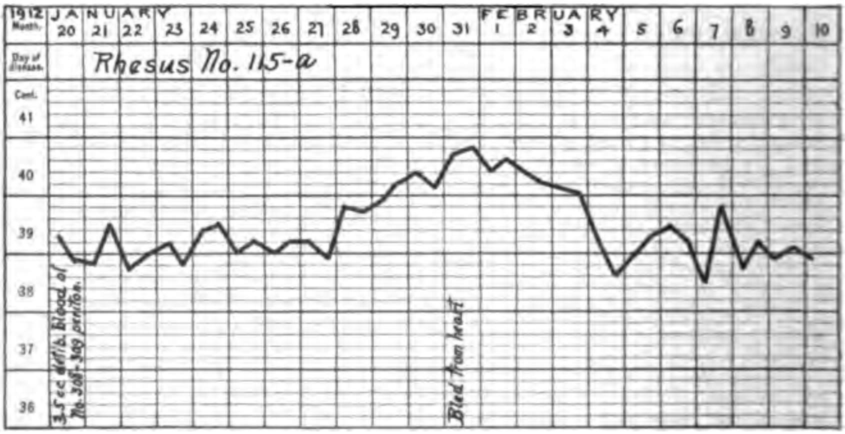
CHART NO. 10



Temperature curve of rhesus No. 115*b*, showing reaction following immunity test.

It would appear therefore (1) that of the two animals that were inoculated with the unfiltered serum obtained after coagulation and centrifugation of virulent blood, one (the one receiving the larger dose) failed to react without, however, being resistant to the subsequent immunity test and (2) that neither of the two monkeys inoculated with the filtered serum was infected nor were they vaccinated by the inoculation, although the failure of one of them (115*a*) to react to two successive immunity tests might have suggested that he had been vaccinated had he not been given a third test to which he responded promptly and definitely.

CHART NO. 11

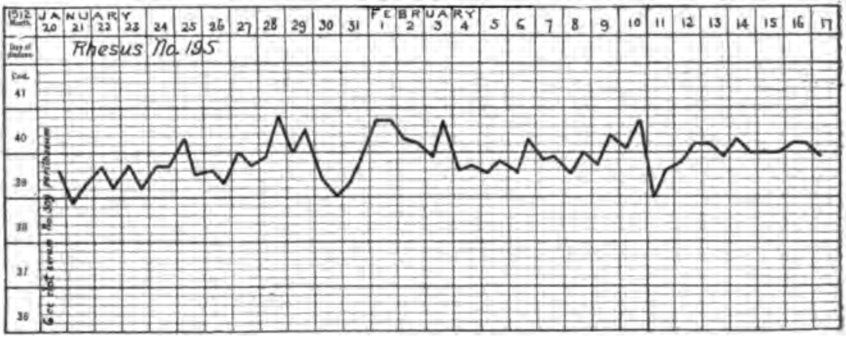


Temperature curve of rhesus No. 115*a*, showing reaction following third immunity test

Experiment No. 10.

On January 20, 1912, some blood was drawn into a tube from the carotid of rhesus No. 309, which at this time was in the second day of a sharp attack of the experimental disease. This blood was allowed to clot at room temperature. At the end of two and one half hours it was centrifugated, after which the perfectly clear serum was pipetted off and a portion diluted with 2 volumes of saline solution. This diluted serum was then passed through a Berkefeld candle, after which the following inoculations were made: Rhesus No. 194 was given 18 c. c. of the filtrate (representing 6 c. c. of serum) intraperitoneally; rhesus No. 195 was given 6 c. c. of unfiltered serum, likewise intraperitoneally.

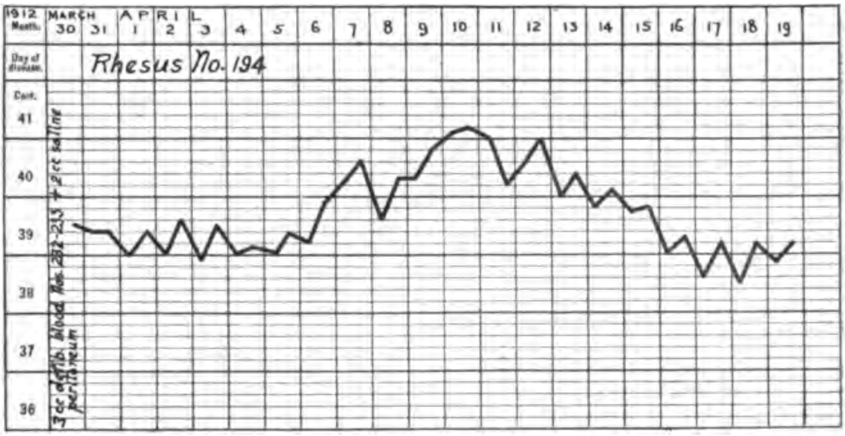
CHART No. 12



Temperature curve of rhesus No. 195, showing what was probably a reaction (complicated by tuberculosis), following an inoculation with blood serum.

Result: Rhesus No. 195 developed what was probably a typhus reaction after an incubation period of 8 days (chart 12). Some doubt, however, is cast upon this interpretation by the fact that this monkey's normal temperature was somewhat high, due, probably, to a coexisting tubercular infection that later was found to be present.

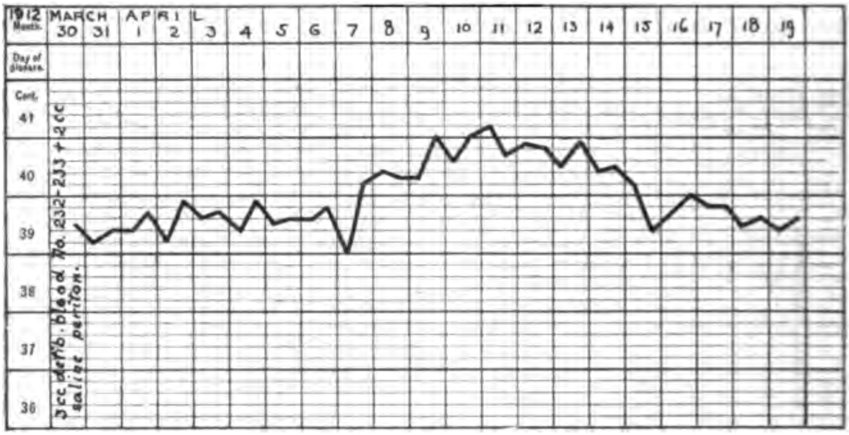
CHART No. 13



Temperature curve of rhesus No. 194, showing reaction following second immunity test.

Rhesus No. 194 presented no indications of a reaction during a period of observation of 34 days. At the end of this time he was subjected to an immunity test consisting of an intraperitoneal injection of 6 c. c. of virulent defibrinated blood without eliciting any evidence of a reaction. This would suggest that this monkey had been made refractory by the inoculation with the filtrate, just as appeared to have happened in one instance in Rickets and Wilder's experience (Wilder, 1911) and in one instance in the experience of Nicolle, Conor, and Conseil (January, 1911). On subjecting this monkey to another immunity test (3 c. c. defibrinated blood intraperitoneally), however, 70 days after the inoculation with the filtered serum rhesus No. 194 responded promptly and sharply as may be seen from chart 13.

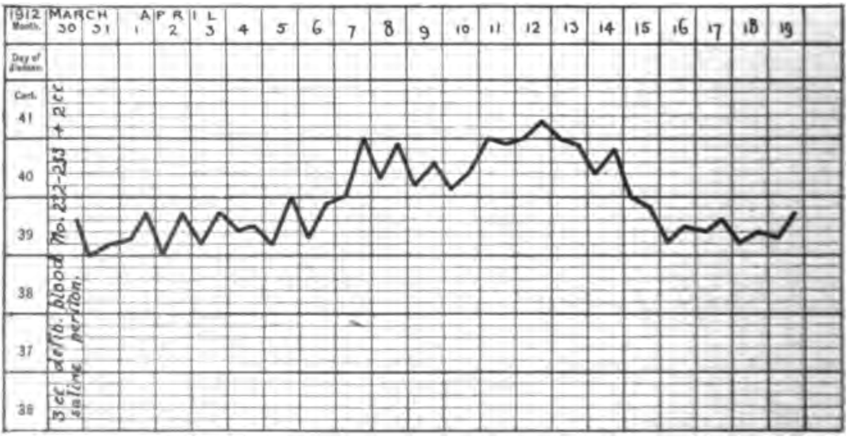
CHART NO. 14



Temperature curve of rhesus No. 223, showing reaction following immunity test.

It would appear therefore that the inoculation of rhesus No. 194 with 6 c. c. of filtered serum obtained after centrifugation of clotted typhus blood had neither infected nor vaccinated this animal.

CHART NO. 15



Temperature curve of rhesus No. 224, showing reaction following immunity test.

Experiment No. 11.

On March 6, 1912. blood was aspirated from rhesus No. 210 and No. 213. The former was in the seventh and the latter in the fifth day of an experimental typhus. The blood was allowed to clot. After 3 hours it was centrifugated in order better to separate the serum from the clot. The serum was then pipetted off and the two specimens were mixed. A portion of this serum was diluted with 3 volumes of saline solution and then passed through a Berkefeld filter, after which the following inoculations were made:

Rhesus No. 221 received 6 c. c. of unfiltered serum, rhesus Nos. 223 and 224 each received 6 c. c. of filtered serum intraperitoneally.

Result: None of these animals presented any evidence of a reaction following this inoculation. Twenty-four days later the three were subjected to an immunity test consisting of an intraperitoneal injection of 3 c. c. of virulent defibrinated blood of rhesus Nos. 232 and 233, diluted with 2 c. c. of saline solution. Following this rhesus Nos. 223 and 224 responded promptly and sharply (charts 14 and 15), but No. 221 gave no evidence of a reaction. Rhesus No. 221 has been subjected to two more immunity tests since, but so far has presented no evidence of a reaction. (Cf. Exp. 5.)

It would appear, therefore, that the inoculation of two monkeys with filtered serum obtained after centrifugation of clotted typhus blood had produced neither infection nor immunization in either.

Summarizing our attempts to infect the rhesus monkey with filtered typhus blood serum, we find that in no instance was infection produced, and that when subjected to an immunity test 2 (rhesus 115a, experiment 2, and rhesus 194, experiment 3) of the 7 monkeys employed at first appeared to be resistant (apparently vaccinated), but later when the test was repeated both responded.

Discussion.—Having presented first a summary of the results of the filtration experiments recorded in the literature and then detailed our own attempts to pass the virus of typhus through the Berkefeld filter, we may proceed with a consideration of their interpretation and significance.

The significance to be attached to the results of the filtration experiments, as a whole, evidently hinges on the interpretation to be given to the observation that some of the monkeys that had been inoculated with filtered typhus blood serum were subsequently resistant to an immunity test, although the inoculation with the filtrate had not been followed by any definite evidence of a febrile reaction. Nicolle, Conor, and Conseil (October, 1910, p. 3) interpret the resistance to the immunity test of one of their monkeys as indicating an immunization caused by "the microbe of typhus, which is very small and passes the Berkefeld filter"; whereas, Wilder suggests that a similar result in Ricketts's and Wilder's experience "may be explained by one or more of several different hypotheses. The animal may have been naturally immune to typhus. If such is the case, however, he is the first normal monkey with which we have had to deal that has shown such an absolute immunity when inoculated with over 1 c. c. of virulent blood. A second possibility is that the animal was immunized by the filtered serum." "Such immunization could have been accomplished either by microorganisms sufficiently small to pass the filter, by fragments of organisms, or by toxins." Although Wilder is evidently disinclined to attach any importance to the idea that the normal monkey may be naturally immune to typhus, and Nicolle, Conor, and Conseil do not even consider it, the results of our inoculations with virulent typhus blood serum (unfiltered), as well as the final results of the repeated immunity tests, clearly show that something in the nature of a natural immunity or transient unresponsiveness to typhus is possessed by some normal monkeys and we believe this to be the true explanation of the instance noted by Nicolle, Conor, and Conseil and that by Ricketts and Wilder. We believe that, had they repeated the immunity tests in these monkeys as we did in ours, their results would probably have shown as did ours that these animals were only apparently (? transiently) resistant. These monkeys were therefore not immunized by the filtered typhus serum.

CONCLUSIONS.—It is permissible to conclude from the foregoing that there is no evidence to show that the virus in the blood of typhus is able to pass the Berkefeld filter; and, incidentally, that virulent typhus blood contains no toxin, or contains it in quantities too small to cause an appreciable increase in the normal resistance of the monkey when injected, even repeatedly, in the ordinary doses.

THE VIRUS IN THE LOUSE.

The fact that the organism of typhus, as it occurs in the blood, does not appear capable of passing the Berkefeld filter does not of necessity mean that it may not be capable of passing in the form in which it exists in the body of the louse. It was decided, therefore, to put this idea to the test of experiment.

Experiment No. 12.

On December 3, 1911, 82 living body lice of group No. 7—M and 83 of group No. 8—M were crushed and rubbed up in 16.5 c. c. of saline solution. Of this suspension 11 c. c. were diluted with an equal volume of saline solution and filtered through a Berkefeld filter. With 15 c. c. of the clear filtrate, representing 75 body lice, rhesus No. 311 was inoculated by an injection of about 13 c. c. intraperitoneally and about 2 c. c. subcutaneously. Control inoculations with the original (undiluted) suspension (reported in a previous communication by Goldberger and Anderson, Mar. 1, 1912) were made in two rhesus monkeys; one, No. 308, received 3.5 c. c. (representing 35 lice), and No. 309, 1.5 c. c. (representing 15 lice) subcutaneously.

Body lice of group No. 7—M had been allowed to feed daily during the 6 days immediately prior to the date of the experiment on various cases of typhus fever in the Hospital General, Mexico City. They were last applied to case No. 16—M, in the eleventh day of illness, at 10.50 to 11.20 a. m. December 2. Body lice of group No. 8—M were insects that had been allowed to feed daily during the 5 days immediately preceding the date of the experiment on various cases of typhus fever. They were last applied to case No. 16—M, in the eleventh day of illness, at 10.20 to 10.50 a. m., December 2. Throughout the period during which they were allowed to feed on patients with typhus the lice of groups Nos. 7—M and 8—M were kept at room temperature (about 14 to 24° C.).

Result: As has already been reported, the controls—rhesus Nos. 308 and 309—presented no evidence of a typhus reaction. No. 311 developed a markedly remittent temperature following the inoculation with the filtrate, and later was found to be infected with tuberculosis. This experiment has, therefore, no significance, so far as filtration is concerned.

Experiment No. 13.

The preceding experiment was repeated on December 10. At 5.30 p. m. 478 lice of group No. 9—M were crushed and rubbed up in 48 c. c. of saline solution. Of this suspension about 7.5 c. c. (representing about 73 lice) were subsequently injected in rhesus No. 320. Another portion of the suspension, after dilution with 2 volumes of saline solution, was filtered through a Berkefeld filter, and then 39 c. c. of the filtrate, representing not less than 130 lice, were injected intraperitoneally in rhesus No. 319.

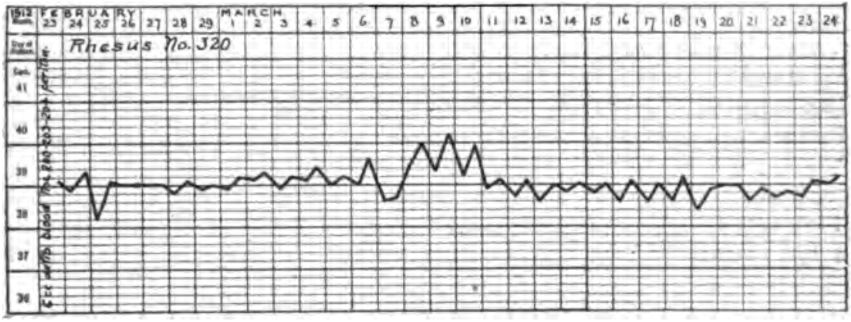
The lice composing group No. 9—M were body lice that had been applied daily and been allowed to feed on various cases of typhus at the Hospital General, Mexico City, during the 6 days immediately prior to the date of the experiment. Throughout this period they were kept at room temperature (14° to 24° C.). They were last applied on December 9 between 10.15 a. m. and 12 m. to case No. 19—M, in the seventh day of illness.

Result: As already reported (Goldberger and Anderson, 1912), rhesus No. 320 presented no evidence of a typhus reaction following the inoculation with the crushed lice suspension. This animal, after resisting two successive immunity tests with defibrinated blood, was subjected to a third test February 23, 1912, or 75 days after inoculation with the lice suspension. This consisted of an intraperitoneal inoculation of 6 c. c. of virulent defibrinated blood. During 3 days, beginning 14 days after this inoculation, rhesus No. 320 presented a well-defined perturbation in temperature that may have represented an abortive typhus reaction (chart 16).

Rhesus No. 319 presented no evidence of a reaction following the inoculation with the filtrate. Thirty-one days later he was subjected to an immunity test consisting of an intravenous inoculation of 3 c. c. of virulent defibrinated blood of rhesus No. 187; 21 days after this, having in the meantime presented no evidence of a typhus reaction, he was subjected to a second test consisting of an intravenous injection of 2.5 c. c. of virulent defibrinated blood of rhesus No. 115*a*. Not presenting any evidence of a reaction, he was subjected to a third test on February 23, 75 days after the inoculation with the filtered lice suspension. This test, as in the case of rhesus No. 320, consisted of an intraperitoneal injection of 6 c. c. of virulent defibrinated blood. During a period of observation of 33 days following this, rhesus No. 319 presented no recognizable indications of a typhus reaction.

Discussion.—The immunity tests given monkeys No. 319 and No. 320 would indicate the possession of a complete insusceptibility to typhus by the former and an almost if not quite complete insusceptibility by the latter. In the early stages of our work we would have been inclined to interpret this resistance as due to an immunization induced by the original inoculation of filtered and unfiltered lice suspensions, respectively. Our more recent experience, however, having developed evidence that a healthy monkey may from time to time be encountered that is naturally resistant, a definite interpretation of the result of this single experiment is not permissible. Nevertheless, we undoubtedly have here a suggestion of a filterable phase in the body of the louse.

CHART No. 16



Temperature curve of rhesus No. 320, showing abortive (?) reaction following third immunity test.

With the idea of obtaining a clearer conception of the nature of the virus of typhus we have studied its resistance to drying and to certain extremes of temperature.

DRYING.

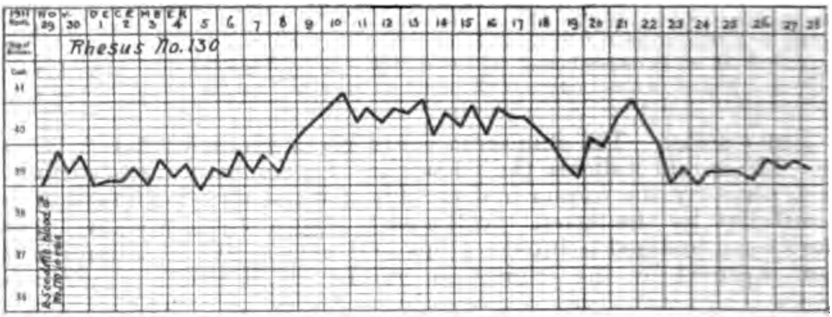
Experiment No. 14.

At 12 m., October 22, 1911, 3 c. c. of virulent defibrinated blood of rhesus No. 141 (then in the third day of an experimental typhus) were put in one petri dish and 6 c. c. in another. The dishes with the lids tilted were placed over sulphuric acid in a desiccator from which the air was then exhausted. This apparatus with the blood was then placed at a temperature of from about 15° to 19° C. At the end of 25 hours the vacuum was broken and the dish containing the 3 c. c. of blood was removed, after which the air in the apparatus in which the dish with the 6 c. c. of blood remained was again exhausted and the apparatus continued as before.

The 3 c. c. of blood were found to have been dried and to have formed a scale on the bottom of the dish. The dry blood was rubbed up in saline solution and injected intraperitoneally into rhesus No. 130.

At the end of 6 days, that is, on October 28, the dish containing the 6 c. c. of blood was removed from the desiccator. The blood was found dried into a scale. This dried blood was rubbed up in saline solution and injected intraperitoneally into rhesus No. 129.

CHART NO. 17

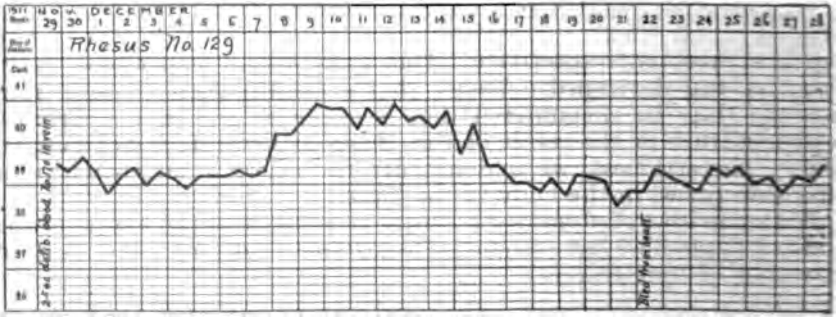


Temperature curve of rhesus No. 130, showing reaction following immunity test.

Result: Neither rhesus No. 130 nor No. 129 presented any evidence of a reaction. Thirty-eight days after the inoculation of the former and 32 of the latter, both were subjected to an immunity test consisting of an intravenous injection of 2.5 c. c. of defibrinated blood of rhesus No. 170, then in the fourth day of an attack of typhus. Both monkeys promptly responded to this test, No. 130 developing a grave reaction, and No. 129 a reaction of moderate severity (charts 17 and 18).

Monkeys Nos. 130 and 129 were therefore neither infected nor immunized by the inoculation, in the one of 3 c. c. of virulent defibrinated blood after drying 25 hours, and in the other of 6 c. c. after drying 6 days.

CHART NO. 18



Temperature curve of rhesus No. 129, showing reaction following immunity test.

Experiment No. 15.

At 2 p. m., February 12, 1912, 3 c. c. of mixed virulent blood of rhesus Nos. 196, 198, and 322 was put in a petri dish, and the dish, with the cover tilted, placed over sulphuric acid in a desiccator as in experiment No. 14. After exhausting the air the apparatus was placed at 15° C. At 2 p. m., February 13—that is, after 25 hours—the dish with the blood now dried to a scale was removed from the apparatus. The blood was then rubbed up in saline solution and injected intraperitoneally into rhesus No. 208.

Result: During a period of observation of 39 days monkey No. 208 presented no evidence of a reaction. Forty-six days after the inoculation this monkey was subjected to an immunity test consisting of an intraperitoneal injection of 3 c. c. of defibrinated blood of rhesus No. 234 diluted with 2 c. c. of saline solution. To this test monkey No. 208 reacted promptly and sharply.

It would appear, therefore, that the inoculation with 3 c. c. of virulent defibrinated blood after drying for 25 hours had neither infected nor immunized this animal.

CONCLUSIONS.—The negative outcome of these two experiments would indicate that the typhus virus can not survive drying, or, more accurately, that it loses its virulence when dried for 25 hours under the conditions described. Unfortunately the nature of the problem does not permit final conclusions to be drawn from so small a number of experiments.

HEAT.

Gaviño and Girard were the first to study the resistance of the typhus virus to heat. In May, 1910, they inoculated a monkey with 10 c. c. of defibrinated typhus blood after heating at 50° for 40 minutes. The monkey so inoculated developed a well-marked febrile reaction after an incubation period of 14 days.

In a second experiment, performed three months later, they inoculated a monkey with 4 c. c. of defibrinated blood after heating at 55° for 15 minutes. This inoculation not being followed by any evidence of a reaction, Gaviño and Girard concluded that the virulence of the blood was destroyed by the heating to which they had subjected it. The immunity of this animal was not tested until later; when tested 56 days after the inoculation of the heated blood with 3 c. c. of defibrinated typhus blood the monkey gave no evidence of a reaction. Commenting on this result, Gaviño and Girard state that it would seem as if the first noninfecting injection with heated blood vaccinated against a subsequent injection with virulent blood, although they add that the objection might be raised that they had encountered in this animal one that was naturally immune.

In October, 1910, Nicolle, Conor, and Conseil reported an experiment in which the intraperitoneal injection of 4 c. c. of citrated blood (virulent for the controls) after heating at 50° C. for 15 minutes conferred no resistance to a subsequent immunity test. They concluded from this that the virus is destroyed by heating at 50° for 15 minutes. In view of the positive result obtained by Gaviño and Girard, and in the light of the fact several times referred to in other portions of this paper that the monkey is not invariably responsive to an infective inoculation, this conclusion is not permissible.

In a paper published in November, 1911, Gaviño and Girard report additional tests of the resistance of the typhus virus to heat. In one experiment they inoculated three guinea pigs intraperitoneally, each with 3 c. c. of defibrinated typhus blood heated at 55° for 15 minutes. None of these pigs presented any indications of a reaction. The immunity test, if made, is not recorded. In a second experiment they inoculated each of two monkeys with 7 c. c. of defibrinated typhus blood after heating at 55° for 15 minutes. Not presenting any evidence of a reaction, they were subjected to an immunity test one month later. To this both monkeys gave marked reactions. Consequently they conclude that typhus blood heated for 15 minutes at 55° loses its virulence and that a noninfecting injection of heated blood does not vaccinate against a subsequent inoculation with virulent blood.

The heating experiments recorded in the literature may be summarized as follows:

At 50° for 40 minutes.—One experiment, 1 monkey; blood retained its virulence (Gaviño and Girard).

At 50° for 15 minutes.—One experiment, 1 monkey; not infected, not immunized (Nicolle, Conor, and Conseil).

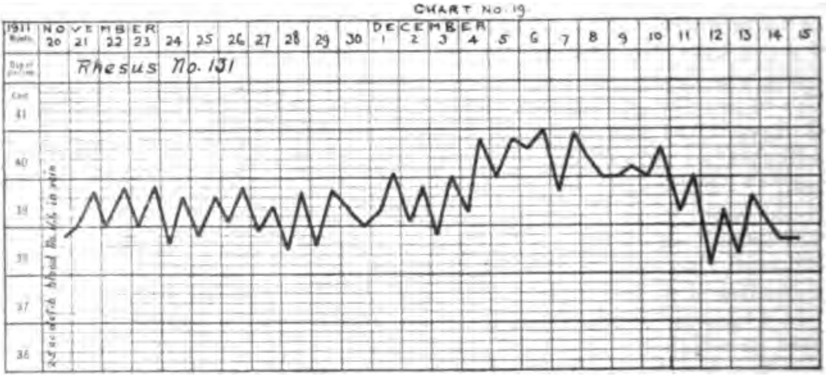
At 55° for 15 minutes.—One experiment, 1 monkey; not infected, but resisted immunity test (Gaviño and Girard). One experiment, 3 guinea pigs; not infected; immunity test not recorded (Gaviño and Girard). One experiment, 2 monkeys; not infected, not immunized (Gaviño and Girard).

Before attempting to interpret these results, we desire to record some experiments of our own.

Experiment No. 16.

On October 22, 1911, we heated some virulent defibrinated blood of rhesus No. 141 in a tube at 55° for 15 minutes and with it inoculated 2 monkeys: Rhesus No. 131, received 3.5 c., c., and rhesus No. 132, 3 c., c., both intravenously.

Result: Neither of this pair of monkeys presented any evidence of a reaction following their inoculation, although 3 other monkeys, inoculated at the same time with like doses of the unheated blood, all developed well marked typhus reactions. Twenty-nine days later rhesus Nos. 131 and 132 were subjected to an immunity test consisting in each of an intravenous injection of 2.5 c. c. of defibrinated blood of rhesus No. 166, then in the third day of a typhus reaction. Both animals reacted sharply (charts 19 and 20); rhesus No. 131, after an incubation of 14 days with a fever of 8 days' duration, and rhesus No. 132 after an incubation of 8 days with a fever of 6 days' duration.



Temperature curve of rhesus No. 131, showing reaction following immunity test.

The two animals were therefore neither infected nor immunized.

Experiment No. 17.

On February 14, 1912, we heated some virulent defibrinated blood in a tube at 60° for 5 minutes and injected 3 c. c. of it into the peritoneal cavity of rhesus No. 199.

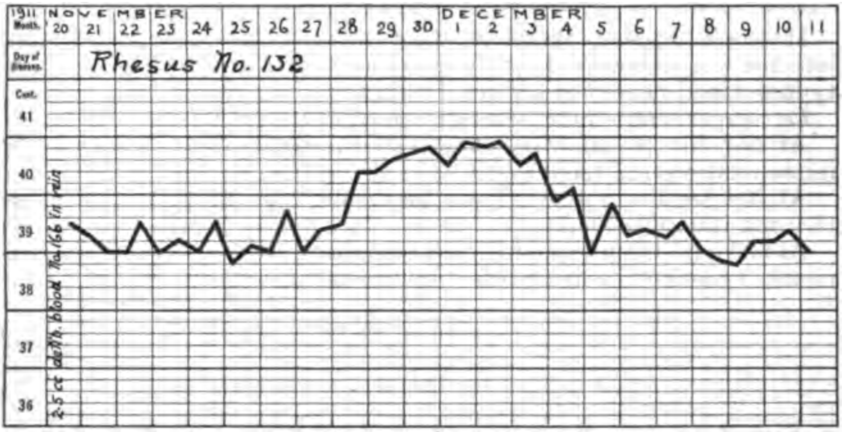
Result: During a period of observation of 23 days monkey No. 199 gave no indications of a reaction. Tested at the end of this period by an intraperitoneal injection of 6 c. c. of virulent defibrinated blood, rhesus No. 199 developed a well marked febrile reaction.

This animal was therefore neither infected nor immunized by the injection of 3 c. c. of blood heated at 60° for 5 minutes.

Experiment No. 18.

On February 23 we gave Java monkey No. 211 two intraperitoneal injections of heated defibrinated typhus blood; the first of 6 c. c. heated by mistake at 60° for 5 minutes, and the second also of 6 c. c. heated at 55° for 5 minutes.

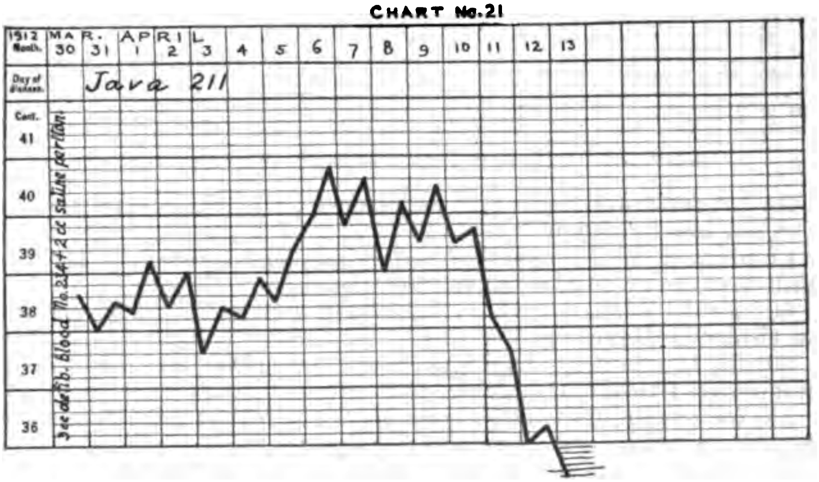
CHART NO. 20



Temperature curve of rhesus No. 132, showing reaction following immunity test.

Result: Following these injections monkey No. 211 manifested no evidence of a reaction. An immunity test given 36 days later consisting of an intraperitoneal injection of 3 c. c. of defibrinated blood of rhesus No. 234, then in the second day of an experimental typhus, diluted with 2 c. c. of saline solution, was followed after an incubation period of 6 days by a typhus reaction terminating in death on the ninth day (chart 21).

CHART No. 21



Temperature curve of Java No. 211, following immunity test.

It would appear therefore that this monkey was neither infected nor immunized by the intraperitoneal injection of 6 c. c. of blood heated at 55° for 5 minutes nor by that at 60° for 5 minutes.

Experiment No. 19.

On March 6, 1912, we heated some virulent blood in a tube at 55° for 5 minutes and injected 6 c. c. of it into the peritoneal cavity of rhesus No. 220.

Result: During a period of observation of 24 days this animal presented no recognizable indications of a reaction. Tested at the end of this time by an intraperitoneal injection of 3 c. c. of defibrinated blood of rhesus No. 234, diluted with 2 c. c. of saline solution, monkey No. 220 promptly developed a severe reaction (chart 22).

It would appear, therefore, that monkey No. 220 was neither infected nor immunized by the intraperitoneal injection of 6 c. c. of typhus blood heated at 55° for 5 minutes.

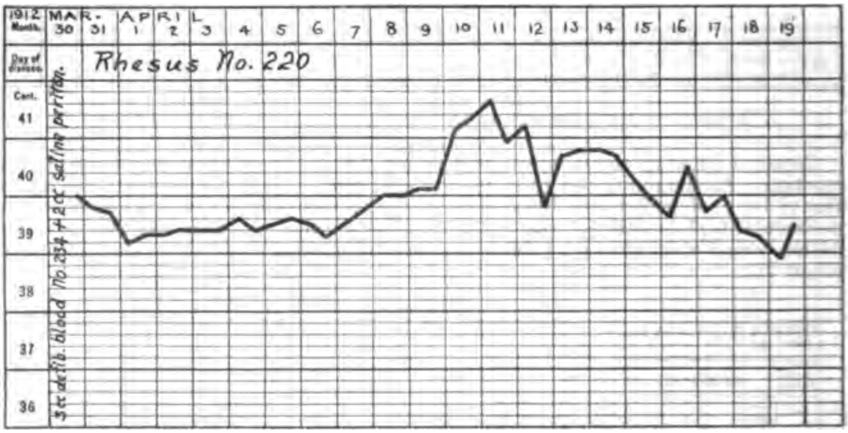
Our experiments may be summarized as follows:

At 55° for 15 minutes.—One experiment; neither infection nor immunization in 2 monkeys.

At 60° for 5 minutes.—One experiment; 1 monkey; neither infection nor immunization.

At 60° for 5 minutes and 55° for 5 minutes, combined.—One experiment; 1 monkey; neither infection nor immunization.

CHART NO. 22



Temperature curve of rhesus No. 220, showing reaction following immunity test.

At 55° for 5 minutes.—One experiment; 1 monkey; neither infection nor immunization.

Combining the summary of the experiments previously recorded with that of our own, we have the following:

50° for 40 minutes.—One experiment, 1 monkey; blood retained its virulence (Gaviño and Girard).

50° for 15 minutes.—One experiment, 1 monkey; not infected, not immunized (Nicolle, Conor, and Conseil).

55° for 15 minutes.—One experiment, 1 monkey; not infected, but resisted immunity test (Gaviño and Girard).

One experiment, 3 guinea pigs; not infected; immunity test not reported (Gaviño and Girard).

One experiment, 2 monkeys; not infected, not immunized (Gaviño and Girard).

One experiment, 2 monkeys; neither infection nor immunization (Goldberger and Anderson).

55° for 5 minutes.—One experiment, 1 monkey; neither infection nor immunization (Goldberger and Anderson).

55° for 5 minutes combined with 60° for 5 minutes.—One experiment, 1 monkey; neither infection nor immunization (Goldberger and Anderson).

60° for 5 minutes.—One experiment, 1 monkey; neither infection nor immunization (Goldberger and Anderson).

Reviewing this summary, we find one experiment by Nicolle, Conor, and Conseil, in which blood heated at 50° for 15 minutes neither infected nor immunized, and one by Gaviño and Girard in which blood heated at 55° for 15 minutes did not infect but apparently immunized, which appear to be out of harmony with the other results. If we bear in mind the possibility, to which we have elsewhere in this paper called attention, that the normal monkey may at times fail to respond to the first and sometimes to the second inoculation with virulent material, we will have (what we believe is) the explanation of this lack of harmony.

CONCLUSIONS.—The determination of the resistance of typhus virus to heat is obviously beset with the same difficulties as the determination of its resistance to drying. Our inability to cultivate the organism hardly permits of the final determination of these points. Nevertheless, when we combine the results of our own heating experiments with those previously recorded we have a body of facts that justify certain conclusions that may be summarized as follows:

1. The virus may (perhaps generally does) retain its virulence after heating at 50° for 40 minutes.
2. The virus is deprived of virulence (? killed) by heating at 55° for 15 minutes.
3. The virus is probably deprived of virulence (? killed) by heating at 60° for 5 minutes.
4. The virus is probably deprived of virulence (? killed) by heating at 55° for 5 minutes.

FREEZING.

So far as we are aware, the following attempts to determine the resistance of the typhus virus to "freezing" are the first to be recorded:

Experiment No. 20.

At 12.30 p. m., October 22, 1911, some defibrinated blood of rhesus No. 141 (chart 3), then in the third day of a typhus reaction, was put into a freezing mixture of ice and hydrochloric acid and frozen solid. At 2.30 p. m. it was removed from this mixture and placed in a tank of brine at 0° C. At 1.30 p. m., October 23, it was taken out of the brine, rapidly thawed and, after warming slightly, 3 c. c. of it were intraperitoneally injected into rhesus No. 155.

Result: After an incubation period of 8 days this monkey developed a well-marked typhus reaction.

The infectivity of the blood was, therefore, not destroyed by "freezing" for 25 hours.

Experiment No. 21.

On February 12, 1912, some virulent defibrinated blood from rhesus Nos. 196, 198, and 322 was frozen as in the preceding experiment and put in a tank of brine at 0° C. The blood was allowed to remain at this temperature for 8 days—that is, till February 20; it was then removed and allowed to thaw at room temperature. Having thawed, it was warmed slightly, and 6 c. c. of it was injected intraperitoneally into rhesus No. 210.

Result: After an incubation period of 9 days, rhesus No. 210 developed a well-defined typhus reaction of about 8 days' duration. He later resisted an immunity test consisting of an intraperitoneal injection of 3 c. c. of defibrinated blood of rhesus No. 324, diluted with 2 c. c. of saline solution.

It appears, therefore, that the infectivity of the blood was not destroyed by "freezing" for 8 days.

Experiment No. 22.

On February 23, 1912, some virulent blood obtained from rhesus Nos. 200, 203, and 204 was frozen and placed in brine at 0° C., as in the preceding experiments. It was kept in the brine at 0° C. for 15 days until March 9, when it was removed and permitted to thaw at room temperature. After warming slightly, 6 c. c. of it was injected intraperitoneally into Java monkey, No. 226.

Result: During a period of observation of 30 days this animal presented no evidence of a reaction. Thirty-two days after the inoculation monkey No. 226 was subjected to an immunity test consisting of an intraperitoneal injection of 3 c. c. of defibrinated blood of rhesus No. 216, diluted with 2 c. c. of saline solution. To this it responded promptly with a severe typhus reaction.

Virulent blood, after "freezing" for 15 days, did not therefore infect or vaccinate.

CONCLUSIONS.—The foregoing experiments are not extensive enough to define more than roughly the degree of resistance of the typhus virus to freezing. It is clear, however, that typhus blood may retain its infectivity after freezing (0° C.) for at least 8 days.

SUMMARY AND CONCLUSIONS.

1. The literature bearing on the duration of the infectivity of the blood is critically reviewed. Two experiments are reported, and the following conclusions are drawn:

(*a*) The blood of the monkey infected with typhus may be virulent in the prefebrile stage, but no satisfactory evidence of that fact has as yet been adduced.

(*b*) The blood of the monkey may still be virulent 24 to 32 hours after the return of the temperature to normal.

2. The literature bearing on the question of the localization of the virus is critically reviewed, and it is pointed out that the evidence adduced by Nicolle, Conor, and Conseil, in support of their hypothesis of an intraleucocytic localization, is not valid. New experiments are detailed, and the following conclusions are drawn:

(*a*) The available evidence favors the view that the typhus virus is extracellular and free in the circulating plasma.

(*b*) The serum of virulent typhus blood is constantly infective whether obtained from defibrinated blood or after clotting, instances of its apparent avirulence being explicable by a natural resistance of the monkey.

(*c*) It may perhaps be possible to deprive typhus blood serum of its virulence by prolonged centrifugation; but this does not necessarily indicate an intraleucocytic localization of the virus.

(*d*) Repeated (three) washings of the blood corpuscles does not deprive them of their infectivity.

3. The literature bearing on the question of the filterability of the typhus virus is critically reviewed. It is found that eight attempts have been recorded to pass the virus through the Berkefeld filter. Of these, six were clearly negative; in one of the other two, the monkey,

without giving any evidence of a reaction to the inoculation, was later found to be resistant to an immunity test; in the other, one of a pair of monkeys is described as having presented a doubtful reaction to the inoculation and later was found resistant to a single immunity test.

New filtration experiments are reported, but in no instance was infection produced; when submitted to an immunity test, two of seven monkeys at first appeared to be resistant, but later, when the test was repeated, both responded.

The conclusion is drawn that there is no evidence to show that the virus in the blood of typhus is able to pass the Berkefeld filter; and, incidentally, that virulent typhus blood contains no toxin, or that it contains it in quantities too small to cause an appreciable increase in the normal resistance of the monkey when injected, even repeatedly, in the doses ordinarily employed for inoculating the monkey.

Two attempts are recorded to filter the virus as it exists in the body of the louse; in one, the monkey inoculated with the filtrate, without giving any indications of a reaction, was subsequently found refractory to repeated immunity tests, suggesting that he had been vaccinated by the filtrate. While this seems to point to the existence of a filterable phase in the body of the louse, it can not be regarded as conclusive without further corroborative work.

4. The resistance of the virus to drying is tested in two experiments with results indicating that the virus is deprived of virulence at the end of 25 hours.

5. The literature bearing on the resistance of the virus to heat is critically reviewed. The results recorded are summarized, some new experiments detailed, and the following conclusions drawn:

(*a*) The virus may (perhaps generally does) retain its virulence after heating at 50° for 40 minutes.

(*b*) The virus is deprived of virulence (? killed) by heating at 55° for 15 minutes.

(*c*) The virus is probably deprived of virulence (? killed) by heating at 60° for 5 minutes.

(*d*) The virus is probably deprived of virulence (? killed) by heating at 55° for 5 minutes.

6. The resistance of the virus to freezing (0° C.) is tested. It is found that it may retain its infectivity, after freezing (0° C.), for at least 8 days.

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SANITARY ADVICE FOR KEEPERS OF SUMMER RESORTS.

By W. C. Rucker, Assistant Surgeon General, Public Health and Marine-Hospital Service.

Until comparatively recent years if a keeper of a summer resort provided good housing and feeding facilities, suitable and proper social diversions, and a reasonable amount of rest and quiet, the keeper of the resort considered that he had done his duty well, and other things being equal was reasonably sure that he would have a fair return for his investment and effort. While all of these points are of no mean weight in the minds of persons who go to the seashore, the mountains, or the country to avoid the heat and discomforts of the city, they have become secondary, and the question which is now asked first of all is as to the healthfulness of the resort in question. Aside from the financial loss which the manager of a summer pleasure ground may sustain from an outbreak of sickness among his guests, there is a moral obligation to protect and further as far as possible their health interests.

In a general way it may be stated that disease is carried from the sick to the well, either directly by persons or indirectly by food and drink, dust, and insects. If the avenues for disease germs are closed there need be comparatively little disease. It is thus seen that most disease is environmental, and it is therefore the duty of persons who are in charge of summer resorts to maintain the environment of their guests in as healthful a condition as possible.

The great source of disease in a summer resort is the toilet. In many localities it is of the most primitive pattern, and maintained in a condition of noisome filth which would not be tolerated under any other circumstances. Frequently it is merely a surface privy, to which the barnyard fowls and domestic animals have free access. Again there may be a pit privy, or a cesspool which drains into the well, or into the stream which furnishes the water for the establishment.

Inasmuch as typhoid fever, a disease which by preference spends the warm months at a summer resort, is caused by a germ which is peculiar to man, and which leaves the body of the sick patient in his discharges, it may be seen that any method of disposing of human excrement which does not absolutely insure that it will not be carried to well persons is faulty, not to say criminal. After the germ of typhoid fever has left the body of the sick patient in his discharges, it is carried to well persons in food or drink, or through the intermediation of flies or dirty fingers.

It is the duty of every keeper of a summer resort to provide clean, well-screened places of easement for his guests, and to see to it that the fecal material deposited in this place can not escape and find entrance into the food and drink of the guest. If there is a cesspool, or a pit, it must not leak, and it must be guarded against flies, because these insects, which are bred in filth and lead a life of sin and iniquity, carry the germs on their feet to the food stuffs in the kitchen or dining room, thus delivering the germs in a live and virulent condition to well people.

The selection of a water supply is of the utmost importance. It should not be from a stream which receives the drainage of human habitations. In this connection it may be remarked that the old theory of the self-purification of streams has been exploded. If well water is used, it should not be from a shallow surface well, nor should it be from a well which by any chance may receive the drainage of human dwellings. Other things being equal, driven or artesian wells are far preferable.

If there is any doubt as to the purity of the water, it should be sterilized, either by boiling or by the addition of calcium hypochlorite prior to using.

Mention has been made of the carriage of the germs of typhoid fever by dirty fingers. This does not necessarily mean fingers which are mechanically dirty. It has been found in recent years that a large number of persons who have had typhoid fever continue to pass the germs of that disease in their discharges for a considerable period after their recovery from the disease. These persons are called typhoid carriers. It is of course an impossibility for the manager of a summer resort to examine all of his employees to determine whether or not they may be carriers, but it is his duty, when selecting persons who are to be employed in the preparation and serving of food or cleaning the dishes and kitchen utensils, to inquire whether or not they have had typhoid fever recently, and to employ none who have been afflicted with that disease within three or four months.

It has been shown that flies carry disease. The model summer resort has no flies. This condition of affairs may be brought about by preventing their breeding, and by screening the hostelry against them. Flies breed in manure. Therefore the barnyard or stables should be kept scrupulously clean, and the manure stored in well-screened metal-lined bins. The stable itself should also be screened. This adds not only to the comfort of the guests, but also saves the horses and cattle a great deal of energy, which would otherwise be expended in fighting flies.

One of the things which city people most desire when going to the country is milk. Milk which is produced by dirty cows in a dirty stable, and secured and handled by dirty dairy hands, is unfit for human consumption. The best advertisement that any country resort can have is a clean, airy, wholesome dairy, in which clean cows are milked by clean laborers, and in which the processes to which the milk is subjected follow a cleanliness of levitical scrupulosity.

It has been recommended that all of the buildings of a summer resort be screened. This not only excludes flies, but it also prevents the entrance of mosquitoes. Aside from the fact that these insects act as the producers of insomnia and irritating inflammations, they are also the purveyors of malaria, which they introduce into the system of the guests by biting them. While it is desirable that they be excluded, it is even more necessary that they be prevented from breeding. Most summer resort keepers breed their own mosquitoes, and a careful survey of the premises will discover small pools of water, unscreened rain-water barrels, and small collections of water in tin cans, flower pots, and other easily overlooked small receptacles, all of which may contain "wigglers," which are the immature forms of mosquitoes. If these are emptied or oiled, or have a considerable quantity of salt placed in them, they will cease to be producers. In fountains and ornamental pools, to which none of these methods may be applied, the planting of small fish will destroy the mosquito larvæ, and thus prevent their multiplication.

The careful tuberculosis patient may be quite harmless in a summer hotel, but those who are careless and expectorate promiscuously are a positive danger, and while such persons are always to be regarded with consideration and charity, it may become necessary to recommend that they spend their summer in a sanitarium, rather than in a public resort where they may endanger others.

There are two sorts of vermin which may be disease carriers, and with which the summer resort keeper is at constant war; these are the rat and the cockroach.

Rats stay where they can get food. Therefore if all food supplies intended for human beings, and all remnants of human food, be guarded against them their numbers will fall off considerably. Furthermore, if stables are maintained in a cleanly condition, and if the rats are excluded from feed rooms, they will find that they must move on or be starved to death. Those which remain may be killed off, either by poisoning with some reliable agent, such as phosphorus or arsenic paste. Traps will take off a good many, and a good active terrier makes an excellent agent for the extermination of these pests.

Cockroaches may be gotten rid of by starvation, that is, the protection of foodstuffs against them, absolute cleanliness, or by the use of some agent which kills cockroaches but is harmless to man. Borax mixed with sugar has been recommended for this purpose.

Finally let it be stated that if the keeper of a summer resort has any doubt as to the sanitary condition of his premises, or if he is brought face to face with any sanitary problem with which he does not know how to deal, it is his duty to consult the local health officer.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

CHICAGO, ILL.

COMMON DRINKING CUPS—USE OF, IN PUBLIC OR SEMIPUBLIC PLACES PROHIBITED.

Sec. 1. That no person, firm, or corporation as owner, agent, employee, or person in charge or control of any railroad or railway station located within the city of Chicago, any railroad or railway car or train operated from point to point within said city, any public or private school, any municipal or office building, any lodging or boarding house, hotel, club, theater, public hall, amusement ground, factory, office, store, or structure of any name or description whatsoever, shall keep, offer, exhibit, or display for use any common drinking cup, glass, or other receptacle.

Sec. 2. Any person, firm, or corporation violating any of the provisions of section 1 hereof shall be fined not less than $5 nor more than $50 for each offense.

Sec. 3. This ordinance shall take effect and be in force ninety (90) days from the date of its passage.

[Ordinance adopted May 8, 1911.]

ELYRIA, OHIO.

MEAT—SLAUGHTER, PREPARATION, CARE, AND SALE.

Section 1. No one shall kill and offer for food animals affected with the following-named diseases:

(1) Anomalies of the blood (anemia, leucemia, hemoglobinemia, icterus, uremia).
(2) Poisoning from any mineral drug or vegetable.
(3) Purturient paresis (milk fever).
(4) Animal parasitism, the parasite known to be directly or indirectly transmissible to man.
(5) Putrid intoxication (sapremia).
(6) Pyemia.
(7) Septicemia.
(8) Malignant edema.
(9) Anthrax.
(10) Foot-and-mouth disease.
(11) Cowpox, sheep pox when animals show fever.
(12) Rabies.
(13) Glanders.
(14) Tuberculosis.
(15) Actinomycosis.
(16) Contagious pleuropneumonia.
(17) Hemorrhagic septicemia.
(19) Diphtheritis.
(20) Dysentery.
(21) Hog cholera.
(22) Swine plague.
(23) Chicken cholera.
(24) Mycotic gastro-enteritis.
(25) Texas fever.
(26) Tetanus.
(27) Malignant epizootic head catarrh.

(28) Malignant tumors.
(29) Puerperal fever.
(30) Emaciation.
(31) Advanced pregnancy.
(32) Recent parturition (at least 15 days must have elapsed).
(33) Overheated, feverish animals.
(34) Exhausted, fatigued animals should have 8 hours' rest before being slaughtered.
(35) Fractures, bruises, contusions (when fever present).
(36) Advanced stages of mange.
(37) Advanced stages of footrot.
(38) Suppurative or gangrenous inflammation of the udder (when fever is present).
(39) Wounds (when fever is present).
(40) Any disease of the heart, lungs, liver, kidney, spleen, peritoneum, pleura, or any organ which would render the meat unfit for human food.
(41) Animals less than 30 days old. (Calves must dress at least 45 pounds.)
(42) Animals killed or wounded by accident.

Sec. 2. Where an organ or part of a carcass is bruised or injured, the part injured must not be offered for sale; the rest of the carcass, if fit for food, will be allowed to go on the market.

Sec. 3. The body of any animal or part thereof, which is to be used for food, shall not be carted or carried through the streets or avenues unless it be covered so as to protect it from dust and dirt; and no meat, poultry, game, or fish shall be hung or exposed for sale in any street, or outside of any shop or store, or in the open windows and doorways thereof, in the city of Elyria, Ohio. At all times meat, poultry, game, or fish on the markets shall be protected from flies, dust, and dirt by a fine screen.

Sec. 4. The meat of boars and rams shall not be held or offered for sale.

Sec. 5. No meat above the size of a rabbit shall be taken to any public or private market to be sold for human food until the same shall have been fully cooled after killing, nor until the organs of the abdominal and thoracic cavity, head and feet, except of poultry and game, and except the head and feet of swine shall have been removed.

Sec. 6. No one shall sell or offer for sale in the city of Elyria any meat that is kept fresh by salicylic or boracic acid, or any other preservative.

Sec. 7. (*a*) Every butcher or other person occupying or using any room or building where any cattle are slaughtered or dressed for market or stores shall cause such room or building and all appurtenances to be thoroughly cleansed and all offal, blood, fat, garbage, refuse, and unwholesome or offensive matter to be removed therefrom once every 24 hours after the use thereof for any purpose herein mentioned; and the room or building mentioned must be well drained into a sewer or other place acceptable to the inspector.

(*b*) All meat dealers, butchers, or fishmongers must keep their stores, salesrooms, market stalls, slaughterhouses and all appurtenances thereto in a clean and sanitary condition, and provide proper drainage and ventilation for the same. Windows and doors shall be provided from May 1 to October 1, inclusive, with sound screens of mesh sufficiently fine to keep out flies and other insects.

Sec. 8. No meat dealer or butcher shall keep meats, fish, or fowls in any refrigerator or ice box unless the same shall be lined with lead or some other proper substance; so as to be water-tight nor unless the same be provided with drainage as prescribed in the plumbing code of this city.

Sec. 9. All meat brought into market must be placed within the stall or stalls of the owner of such meat, and all meat must be removed from the market at the close of each market day, unless the meat is placed in cold storage.

Sec. 10. Lard, when offered for sale, containing any substance other than the fat of swine must be labeled as such, and not sold as pure lard.

Sec. 11. No one shall carry, while bound or tied by their legs, or bound down in any manner, in any vehicle in the city of Elyria, any cattle, sheep, hogs, or calves. Such animals shall be allowed to stand freely in any vehicle when transported and while being therein.

Sec. 12. The fact of any cattle, sheep, hog, or lamb being in stockyard or slaughterhouse pen shall be considered sufficient evidence that the same is being exposed for sale; and the fact that the carcass of any cattle, hog, or lamb, or any part thereof, is found in any public or private market place, dressed and prepared as such meats usually are for market, it shall be deemed as sufficient evidence that the same is on sale, and no animal or part thereof, nor any fish, game, or poultry that has been examined and condemned by the meat inspector or his assistant shall be held, sold, or offered for sale for human food in any market place in the city of Elyria.

SEC. 13. Upon any meat, fowl, fish, or vegetables being found by any inspector of the health department in a condition which renders them, in his opinion, unwholesome and unfit for use as human food, he is empowered, authorized, and directed to immediately condemn the same and cause them to be removed to the garbage plant for destruction, and to report his action to the health officer.

SEC. 14. No person shall vend meat or other product of any cattle, sheep, or swine in the city of Elyria, Ohio, in quantities less than the quarter unless he shall have first obtained a permit from the board of health to do so.

SEC. 15. All meat permits shall be renewed annually in January, for which a charge of $1 shall be made. Permits issued after July 1 shall be charged for at the rate of 50 cents for each permit covering the second half of the year only.

SEC. 16. All applicants for a permit shall state—

(a) The applicant's name, post-office address, and the place or places of business.

(b) If the applicant buys part or all of his meat from others, the name and addresses of all such persons.

(c) If applicant butchers his own meat, the location of the slaughterhouse, the days and the time of day the larger amount of the killing is done.

SEC. 17. The board of health may refuse to grant such permit and may revoke the same when granted if the applicant or person to whom the permit is issued does not comply with the lawful rules and regulations now in force, or that may hereafter be adopted by the board of health for the sale of meat.

SEC. 18. No butcher or other person shall bring into the city of Elyria or sell or offer for sale in the city of Elyria for human food any calf or any part of the meat thereof which at the time it was killed was less than four weeks old, or any pig or any part of the meat thereof which at the time it was killed was less than five weeks old, or any lamb or any part of the meat thereof which at the time it was killed was less than eight weeks old.

SEC. 19. All animals at the stockyards or in possession of any butcher, intended for slaughter for the city markets or stores, when condemned according to the provisions of this code by the meat inspector, must not be slaughtered except in the presence of the inspector, due notice being sent by the butcher to the health office for that purpose. All carcasses or parts of carcasses that are condemned by the meat inspector shall be rendered unfit for food by treatment with kerosene oil.

SEC. 20. All meat shipped into the city for sale or offered for sale shall be subject to inspection by the meat inspector.

SEC. 21. All meat condemned in the city by Government or State inspectors shall be destroyed under the supervision and subject to the directions of the dairy and food inspector.

SEC. 22. No meat, fish, or vegetables not being fresh, sound, wholesome, or any meat or fish that died of disease or accident shall be brought into the city or offered or held for sale as food anywhere in the city of Elyria, nor shall any such articles be kept or stored therein.

SEC. 23. Whoever violates any provisions of the above resolution, or obstructs or interferes with the execution thereof, or willfully or illegally omits to obey any provisions of said resolution shall be fined not to exceed $100 or imprisonment for not to exceed 90 days, or both; but no person shall be imprisoned hereunder for the first offense, and the prosecution shall always be as and for a first offense, unless the affidavit upon which the prosecution is instituted contains the allegation that the offense is a second or repeated offense.

SEC. 24. This resolution shall be in force and effect from and after the earliest period allowed by law.

[Ordinance adopted July 28, 1911.]

FLINT, MICH.

FOODSTUFFS—PROTECTION OF FOODSTUFFS AND THE CONSTRUCTION AND MAINTENANCE OF PLACES WHERE FOOD IS PREPARED OR STORED.

Rule 1. No place for the care or storage of food or its manufacture shall be located upon grounds which are unfit and insanitary for the same.

Rule 2. The surfaces of floors, walls, and ceilings are to be hard and as smooth as possible that they may be readily cleaned. Floors which are often wet with decomposable material must be so laid that they drain properly and so that they may be easily washed down.

Tables, benches, dough troughs, etc., are to be freely movable on casters so that the floors underneath are easily accessible. Unnecessary woodwork and fixtures attached to the walls are to be avoided.

The tops of working tables, benches, dough troughs, and similar articles must be smooth and free from unnecessary roughness so that they may readily be cleaned. Resurfacing or redressing shall be done when found advisable to furnish suitable working surfaces.

Rule 3. The doors are to be screened by self-closing screen doors, and all outlets are to be screened. There must be sufficiently screened outlets for ventilation. Fans are to be used if needed to secure ventilation.

There must be sufficient light, preferably daylight, to render easy the use, care, and inspection of all the rooms. This does not apply to storerooms for fruit when ripening where darkness is preferred.

Rule 4. There must be sufficient provision, outside of the workrooms, for storage of food materials, refuse, fuel, unused clothing, and other necessary accessories, not adding to the cleanliness of the workrooms.

Rule 5. No water-closet will be allowed in any room where food or the material from which it is made is kept or used; nor shall there be any direct connection with such rooms. The doors from water-closets must be self-closing by springs or otherwise and be kept closed. Windows in such closets must be screened as well as any other openings, such as ventilators.

Rule 6. Sleeping rooms, if present, must be separated by complete partitions from rooms where food or food materials are used or stored.

Rule 7. The present water furnished by the city must not be used in the preparation of food that is not cooked after such use. No water, unless from a strictly sanitary source, shall be used for such purpose.

Rule 8. The walls and ceilings of workroom are to be whitewashed once every six months, or well painted every five years or oftener, and washed with soap and water every six months or oftener.

Rule 9. All premises and appliances must be kept strictly clean at all times. Racks, hooks, meat-blocks, tables, benches, the walls and doors of coolers, and all utensils are to be scraped or washed and scrubbed often enough to keep them free from accumulations of the materials which come in contact with them.

Rule 10. All food exposed for display or for any purpose outside of screened rooms must be screened. This applies more particularly to the exposure of fruits, etc., in front of stores.

Rule 11. No bottling of milk shall be allowed on the streets. Whenever milk-bottle caps are found carried on milk wagons it shall be considered evidence that such bottling is practiced.

In the interpretation of the above rules, screening, etc., shall be considered necessary only during fly time. And whenever there shall come to the board exceptions made necessary by the character of the work, such as cellars for ripening fruits, etc., the board may, at its discretion, modify such rules.

[Regulations, Board of Health, adopted Jan. 1, 1912.]

NEW YORK, N. Y.

COMMOM DRINKING CUP—USE OF IN PUBLIC PLACES PROHIBITED.

"SEC. 189. The use of a common drinking cup or receptacle for drinking water in any public place or in any public institution, hotel, theater, factory, public hall or public school, or in any railroad station or ferryhouse in the city of New York, or the furnishing of such common drinking cup or receptacle for use in any such plaec, is hereby prohibited."

[Addition to sanitary code adopted Mar. 21, 1911. Effective Oct. 1, 1911.]

REPORTS TO THE SURGEON GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PLAGUE-PREVENTION WORK.

PLAGUE-INFECTED SQUIRRELS FOUND.

During the week ended April 20, 1912, positive diagnosis was made of 14 plague-infected ground squirrels found in Alameda County, Cal., as follows: April 3, 2 squirrels; April 5, 2 squirrels; April 6, 1 squirrel; April 8, 3 squirrels; April 9, 1 squirrel; April 13, 4 squirrels; and 1 squirrel for which no data relative to place and date of finding were obtainable, proven positive April 16.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 10,430 acres of land in Alameda County were covered with poison during the week ended April 20, 1912.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Apr. 16, 1912	135 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

PLAGUE-PREVENTION WORK—Continued.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended.	Total collected.	Found dead.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Apr. 20, 1912	[1] 187	....	164	....
Oakland	.....do.......	[2] 789	22	591	....
San Francisco	.....do.......	[3] 1,854	2	1,421	....
Washington:					
City—					
Seattle	.....do.......	1,032	....	988	....

[1] Identified: Mus norvegicus, 163; Mus musculus, 24.
[2] Identified: Mus norvegicus, 611; Mus rattus, 2; Mus musculus, 176.
[3] Identified: Mus norvegicus, 913; Mus rattus, 265; Mus musculus, 433; Mus alexandrinus, 243.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended April 20, 1912, 694 squirrels from Alameda County, Cal., were examined for plague infection. Fourteen were found to be plague infected.

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 11, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	1	....	New Orleans, La	2	4
Chicago, Ill	5	1	Newport, Ky	1	....
Cincinnati, Ohio	7	4	New York, N. Y	10	4
Danville, Ill	....	1	Omaha, Nebr	1	....
El Paso, Tex	5	4	Peoria, Ill	....	1
Haverhill, Mass	1	2	Philadelphia, Pa	....	1
Johnstown, Pa	1	....	Pittsburgh, Pa	1	....
Kansas City, Kans	6	....	St. Louis, Mo	2	....
Kansas City, Mo	6	8	San Antonio, Tex	1	....
Los Angeles, Cal	2	....	Saratoga Springs, N. Y	....	1
Nashville, Tenn	2	2	South Omaha, Nebr	....	1

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 11, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Beaver Falls, Pa	1	....	New York, N. Y	29	13
Boston, Mass	....	4	Norristown, Pa	1	....
Cincinnati, Ohio	2	1	Oklahoma, Okla	1	....
Cleveland, Ohio	4	1	Philadelphia, Pa	9	2
Kalamazoo, Mich	1	....	Pittsburgh, Pa	6	....
Lancaster, Pa	1	....	Reading, Pa	1	....
Los Angeles, Cal	2	1	St. Louis, Mo	9	1
Melrose, Mass	....	1	San Diego, Cal	1	....
Milwaukee, Wis	3	....	South Bethlehem, Pa	2	....
Moline, Ill	1	....	Wilkes-Barre, Pa	1	....
Newark, N. J	....	1	Yonkers, N. Y	1	....

PELLAGRA.

During the week ended May 11, 1912, pellagra was reported a follows: Chattanooga, Tenn., 1 case; Richmond, Va., 1 case; Wilmington, N. C., 1 case, 2 deaths.

Vicinity of Brownsville, Tex.

Acting Asst. Surg. Fairbanks reports May 18 the occurrence o two deaths from pellagra in one family in the vicinity of Brownsvill Tex.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITI FOR THE WEEK ENDED MAY 11, 1912.

City.	Cases.	Deaths.	City.	Cas	De
Ann Arbor, Mich	1		Newark, N. J		
Aurora, Ill		1	New Beford, Mass		
Baltimore, Md		10	Newburyport, Mass		
Binghamton, N. Y	7	2	New Orleans, La		
Boston, Mass		34	New York, N. Y		
Brockton, Mass		1	Niagara Falls, N. Y		
Brookline, Mass		1	Norristown, Pa		
Cambridge, Mass		4	Oakland, Cal		
Chelsea, Mass		4	Omaha, Nebr		
Chicago, Ill	29	85	Pasadena, Cal		
Chicopee, Mass		1	Peoria, Ill		
Cincinnati, Ohio		5	Philadelphia, Pa	24	
Coffeyville, Kans	1		Pittsburgh, Pa	18	
Danville, Ill		1	Plainfield, N. J		
Dayton, Ohio		7	Providence, R. I		
Denver, Colo		7	Reading, Pa		
Duluth, Minn	2	2	Richmond, Va		
Dunkirk, N. Y	1		Rutland, Vt		
East Orange, N. J		1	San Antonio, Tex		
El Paso, Tex		2	Saginaw, Mich		
Evansville, Ind		1	Salem, Mass		
Fall River, Mass		5	San Francisco, Cal	8	
Fort Wayne, Ind		1	Saratoga Springs, N. Y		
Galesburg, Ill	1	1	Schenectady, N. Y	5	
Grand Rapids, Mich	1	2	South Bethlehem, Pa	1	
Harrisburg, Pa		2	South Omaha, Nebr		
Hartford, Conn		6	Springfield, Ill		
Homestead, Pa		1	Springfield, Mass		
Kalamazoo, Mich	4	3	Superior, Wis		
Kansas City, Mo	3	4	Taunton, Mass		
Lawrence, Mass		7	Toledo, Ohio		
Los Angeles, Cal	2	6	Washington, D. C		
Lowell, Mass		9	Wilkes-Barre, Pa		
Lynchburg, Va		1	Wilkinsburg, Pa	1	
Lynn, Mass		2	Williamsport, Pa		
Malden, Mass		1	Wilmington, Del		
Marinette, Wis		1	Wilmington, N. C	1	
Moline, Ill		1	Yonkers, N. Y		
Montgomery, Ala		2	Zanesville, Ohio		
Nashville, Tenn		6			

POLIOMYELITIS.

During the week ended May 11, 1912, poliomyelitis was repor as follows: Boston, Mass., 1 case; New York, N. Y., 6 cases, w 2 deaths; South Bethlehem, Pa., 1 death.

TETANUS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 11, 1912.

City.	Cases.	Deaths.
Chicago, Ill		2
Dayton, Ohio		1
New Orleans, La		1
Philadelphia, Pa	1	1

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED MAY 31, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Arizona:				
Counties—				
Cochise	Feb. 1-29	11		
Pima	do	5	1	
Total for State		16	1	
Gila	Mar. 1-31	5		
Pima	do	5		
Total for State		10		
Illinois:				
Counties—				
Bond	Apr. 1-30	2		
Boone	do	2		
Bureau	do	12		
Cook	do	16		
Crawford	do	1		
Dekalb	do	1		
Henry	do	12		
Jefferson	do	1		
Kane	do	12		
Lasalle	do	24		
Lawrence	do	1		
McDonough	do	2		
McLean	do	2		
Madison	do	1		
Marion	do	1		
Randolph	do	2		
St. Clair	do	5		
Sangamon	do	2		
Stephenson	do	1		
Vermillion	do	1		
Swan Township	do	5		
Taylor Springs	do	3		
Total for State		109		
ndiana:				
Counties—				
Bartholomew	Apr. 1-30	30	1	
Brown	do	1		
Cass	do	1		
Clark	do	15		
Daviess	do	2		
Dearborn	do	1		
Decatur	do	3		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended May 31, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Indiana—Continued.				
Counties—Continued.				
Delaware	Apr. 1-30	4		
Fayette	do	4		
Gibson	do	17		
Grant	do	3		
Greene	do	1		
Howard	do	2		
Johnson	do	9		
Knox	do	3		
Madison	do	4		
Marion	do	2		
Pike	do	2		
Randolph	do	1		
St. Joseph	do	9	1	
Sullivan	do	11		
Vanderburg	do	5		
Vigo	do	2		
Wabash	do	2		
Wayne	do	3		
Total for State		137	2	
*Missouri:				
St. Louis	May 12-18	1		
Montana:				
Counties—				
Chouteau	Apr. 1-30	1		
Dawson	do	1		
Fergus	do	2		
Hill	do	2		
Lewis and Clark	do	1		
Meagher	do	3		
Musselshell	do	8		
Silverbow	do	1		
Valley	do	10		
Total for State		29		
North Carolina:				
Counties—				
Anson	Apr. 1-30	36		
Beaufort	do	5		
Buncombe	do	2		
Caldwell	do	4		
Carteret	do	3		
Craven	do	14		
Cumberland	do	3		
Duplin	do	4		
Gates	do	2		
Granville	do	4		
Hertford	do	1		
Johnston	do	2		
Lincoln	do	11		
Madison	do	24		
New Hanover	do	13		
Pender	do	3		
Robeson	do	8		
Swain	do	1		
Wake	do	1		
Warren	do	4		
Total for State		145		
Vermont:				
Counties—				
Caledonia	Apr. 1-30	9		
Lamoille	do	1		
Orange	do	1		
Windsor	do	13		
Total for State		24		
Grand total for the United States		471	3	

FORT WORTH, TEX.

Dr. R. B. West, health officer of Tarrant County, reports, May 22, regarding the occurrence of smallpox in Fort Worth and Tarrant County as follows:

From January 19 to May 22, 1912, there were admitted to the isolation hospital at Fort Worth 142 cases of smallpox, of which 37 died. In the county outside of the city there was a total of 21 cases with 9 deaths. These cases were quarantined at their homes. Of the cases admitted to the hospital, 89 cases with 25 deaths were among white Americans, 30 cases with 5 deaths among negroes, and 23 cases with 7 deaths among Mexicans. Of the above cases, 16 with 4 deaths were in children under 10 years of age. Of all the cases coming under supervision, only 3 showed a vaccination scar, and of these 3, 2 had smallpox in so mild a type that they did not go to bed. The other case was in a man who had been partially paralyzed for three years, and was, therefore, confined to his bed, but, like the other 2 cases, this one was also mild.

The first cases appear to have come from Oklahoma, and were in the person of tramps cared for temporarily by the Salvation Army. Another focus was among Mexicans and negroes, and was not discovered until after the death of two Mexicans and a negro. Another focus was in a rooming house, where a mild case diagnosed as chickenpox occurred.

The disease occurred among people in all walks of life. There were a number of other cases which were quarantined in their homes in the city and were not sent to the isolation hospital. These are not included in the above figures.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAY 11, 1912.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	197	6	....	14	....	24	1	....	....	45	34	10	....
Boston, Mass	670,585	194	28	2	167	....	38	....	....	....	79	19	9	....
Chicago, Ill	2,185,283	629	106	12	302	....	218	15	5	....	102	88	13	3
Cleveland, Ohio	560,663	171	31	3	142	1	43	5	....	....	32	9	4	2
New York, N. Y	4,766,883	1,461	284	24	1,671	29	444	20	....	....	487	174	29	4
Philadelphia, Pa	1,549,008	476	55	11	51	4	73	5	....	....	105	57	19	1
Pittsburg, Pa	533,905	132	10	2	165	1	53	1	....	....	36	12	6	1
St. Louis, Mo	687,029	200	25	....	45	....	39	1	....	....	55	27	6	....
Cities having from 300,000 to 500,000 inhabitants.														
Cincinnati, Ohio	364,463	102	4	1	25	....	18	....	....	....	31	15	3	....
Detroit, Mich	465,766	153	12	....	....	....	33	....	2	....	....	....	....	....
Los Angeles, Cal	319,198	105	8	....	13	....	4	....	5	....	11	9	4	1
Milwaukee, Wis	373,857	....	12	2	168	3	19	2	5	....	18	10	6	3
Newark, N. J	347,469	105	28	1	63	1	20	....	....	....	32	17	2	....
New Orleans, La	339,075	136	2	....	24	....	5	....	6	....	25	20	8	....
San Francisco, Cal	416,912	120	5	2	24	....	6	....	1	....	23	12	....	....
Washington, D. C	331,069	99	3	....	89	....	1	....	....	....	34	16	9	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended May 11, 1912—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	72	1		4		29	8	4			14		
Jersey City, N. J	267,779	82		1								8		
Kansas City, Mo	248,381	18			8		4				2	6		
Providence, R. I	224,326	87	10		14	4	16					8		
Cities having from 100,000 to 200,000 inhabitants.														
Cambridge, Mass	104,839	27	8		72	2	4				8	5		
Dayton, Ohio	116,577	43			55		2		1			4		
Fall River, Mass	119,295	27	8	1	2		3				11	5	2	
Grand Rapids, Mich	112,571	25	2		10		5				3	1	4	
Lowell, Mass	106,294	40	3		40	1	3				3	4	3	
Nashville, Tenn	110,364	55	2								7	5		
Oakland, Cal	150,174	49	4	1	7		2				4	2	3	
Omaha, Nebr	124,096	34	1				3				2	1		
Richmond, Va	127,628	36	1		27		3		2		6	3	1	
Toledo, Ohio	168,497	53	2	9	48	1	3	1				6	3	1
Worcester, Mass	145,986	41	7		12	1	8				7	1	3	
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	8	2									2		
Bayonne, N. J	55,545	16			11	1	6				3	2		
Brockton, Mass	56,878	15	1		50		1				8	3	2	
Camden, N. J	94,538		4		1		3				2	1	1	
Duluth, Minn	78,466	28					7				4	4		
Evansville, Ind	69,647	23			3		1				4	2	2	
Fort Wayne, Ind	63,933	15	3		25		1						1	
Harrisburg, Pa	64,186	15	4	1	53						4	2		
Hartford, Conn	98,915	32	3	2	18		9				6	1		
Hoboken, N. J	70,324	13	2		2		5				2			
Johnstown, Pa	55,482	9			9		2		5			1		
Kansas City, Kans	82,331		2		6						3		1	
Lawrence, Mass	85,892	28	1		3		2	1			3	3		
Lynn, Mass	89,336	14			12		6	1			3	1	1	
Manchester, N. H	70,063	16	1		17		3	1			2	2		
New Bedford, Mass	96,652	30	2	1	2		1				6	5		
Oklahoma City, Okla	64,205	6	2								1	1	4	
Pawtucket, R. I	51,622											2		
Peoria, Ill	66,950		6											
Reading, Pa	96,071	33	5	1	2		1				1		1	
Saginaw, Mich	50,510	13	1				5				2	2		
San Antonio, Tex	96,614	84	2		2		4					11	1	
Schenectady, N. Y	72,826	29	3		62	2	6				1	2	1	
South Bend, Ind	53,684	9	1		1		1				1	1		
Springfield, Ill	51,678	10	1						1			1		
Springfield, Mass	88,926	23	3		9		13				7	2		
Trenton, N. J	96,815	42	5		3		5				7	4		
Wilkes-Barre, Pa	67,105	18			3		2				3	3	2	
Wilmington, Del	87,411	26		1								5		
Yonkers, N. Y	79,803	23	15	1	6		4				4	3		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	14	3										1	
Aurora, Ill	29,807	7			1							1		
Berkeley, Cal	40,434	5			44		1				1	1		
Binghamton, N. Y	48,443	22			2		1				1	2	4	
Brookline, Mass	27,792	11			16									
Chattanooga, Tenn	44,604		1				1				1			
Chelsea, Mass	32,452	14			29		1				2		1	
Chester, Pa	38,537													
Chicopee, Mass	25,401	8			4								1	
Danville, Ill	27,871	10			2							1		
East Orange, N. J	34,371	4	1		13		3				1			

MORBIDITY AND MORTALITY—Continued.

***Morbidity and mortality table, cities of the United States, for week ended May 11, 1912*—Continued.**

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants—Continued.														
Elmira, N. Y	37,176	9			84								4	
El Paso, Tex	39,279	31			1							5		
Everett, Mass	33,484	4	3		17		2				4			
Fitchburg, Mass	37,826	8	1		2						1			
Haverhill, Mass	44,115	19	1		18		5				5	1	1	
Kalamazoo, Mich	39,437	16	1								2	4		
La Crosse, Wis	30,417	5					3					2		
Lancaster, Pa	47,227		1		36						1			
Lexington, Ky	35,099	11	1		2		1				2			
Lima, Ohio	30,508	13			3		1							
Lynchburg, Va	29,494	9			18							1	1	
Malden, Mass	44,404	7	1		16		3				3		1	
Montgomery, Ala	38,136	22				2					1	3		
Mount Vernon, N.Y	30,919		1		23		1							
Newcastle, Pa	86,280		1		3		3							
Newport, Ky	30,309	5					2							
Newton, Mass	39,806	6			76						3			
Niagara Falls, N. Y	30,445	8							4			2		1
Norristown, Pa	27,875	5	1	1	2								2	
Orange, N. J	29,630	10	2		8						5	1	1	
Pasadena, Cal	30,291	9	1				1		1			2		
Pittsfield, Mass	32,121	6	2		1		1				2		1	
Portsmouth, Va	33,190	11							10			1		
Racine, Wis	38,002	13	1				4							
Roanoke, Va	34,874	7			10						4			
Salem, Mass	43,697	14			4				2			2		
San Diego, Cal	39,578	3			1						2	2	1	1
South Omaha, Nebr	26,259	10										1		
Superior, Wis	40,384	12		1								1		
Taunton, Mass	34,259	22			1			1			1	1		
Waltham, Mass	27,834	2			51						1			
West Hoboken, N. J	35,403	11	2		5						3	1		
Williamsport, Pa	31,860	13	2		49		1							
Wilmington, N. C	25,748	10	1		1						11	1	1	
York, Pa	44,750		1		2		1							
Zanesville, Ohio	28,026	9	2				1				1	1		
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	10			34						1			
Ann Arbor, Mich	14,817	8												
Beaver Falls, Pa	12,191				2		1							
Biddeford, Me	17,079	2												
Braddock, Pa	17,759	8		1	1	1								
Camden, S. C		1												
Carbondale, Pa	17,040	3			18		4							
Clinton, Mass	13,075	1												
Coffeyville, Kans	12,687										2		1	
Columbus, Ga	20,554	3												
Columbus, Ind		3			1				1		1	1		
Concord, N. H	21,497	11			23									
Cumberland, Md	21,839	8	1		46		1						3	
Dunkirk, N. Y		7	2											
Galesburg, Ill	20,089	4												
Harrison, N. J	14,498	3	2								1			
Homestead, Pa	18,710	4									2			
Kearny, N. J	18,659	2	1		6						1	1		
La Fayette, Ind	20,081	8										2		
Logansport, Ind	19,050	6	1										1	
Medford, Mass	23,156	5	1		30						2	1		
Melrose, Mass	15,715	4			12						1			
Moline, Ill	24,199	7	3	1									1	1
Marinette, Wis	14,610	5					1					1		1
Massillon, Ohio		3												
Montclair, N. J	21,150	3			14									
Morristown, N. J	12,507	3			4									

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended May 11, 1912—Continued.

Cities.	Population United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants—Con.														
Nanticoke, Pa	18,509				3	1								
Newburyport, Mass	19,240	6									1	1		
North Adams, Mass	22,012	6			6							1		
Northampton, Mass	19,431	5	9		3						2			
Palmer, Mass		4												
Plainfield, N. J	22,050	7			7							1		
Pottstown, Pa		3												
Rutland, Vt			1		2							1		
Saratoga Springs, N. Y		5			2									
South Bethlehem, Pa	19,973	9			1		1				1	2		
Steelton, Pa	14,246	4	2		12				1		3			
Warren, Pa	11,080	1					1							
Wilkinsburg, Pa	18,294	7					1				2			
Woburn, Mass	15,308	7			3		1				1			

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

Massachusetts.—Week ended March 2, 1912. Population of reporting towns, 2,593,485. Total number of deaths from all causes 884, including diphtheria 9, measles 3, scarlet fever 2, tuberculosis 84, typhoid fever 4. Cases reported: Diphtheria 86, measles 721 scarlet fever 144, smallpox 11, tuberculosis 193, typhoid fever 12.

Week ended March 9, 1912. Total number of deaths from all causes 874, including diphtheria 8, measles 9, scarlet fever 3, tuberculosis 84. Cases reported: Diphtheria 81, measles 561, scarlet fever 119, smallpox 3, tuberculosis 150, typhoid fever 16.

Week ended March 16, 1912. Population of reporting towns, 2,577,270. Total number of deaths from all causes 880, including diphtheria 10, measles 4, scarlet fever 3, tuberculosis 86, typhoid fever 3. Cases reported: Diphtheria 90, measles 646, scarlet fever 164, tuberculosis 192, typhoid fever 18.

Week ended March 23, 1912. Population of reporting towns, 2,593,485. Total number of deaths from all causes 824, including diphtheria 4, measles 8, scarlet fever 1, tuberculosis 63, typhoid fever 4. Cases reported: Diphtheria 93, measles 628, scarlet fever 124, tuberculosis 144, typhoid fever 20.

Week ended March 30, 1912. Population of reporting towns, 2,569,087. Total number of deaths from all causes 911, including diphtheria 8, measles 3, scarlet fever 3, tuberculosis 87, typhoid fever 1. Cases reported: Diphtheria 105, measles 698, scarlet fever 123, tuberculosis 193, typhoid fever 17.

FOREIGN AND INSULAR.

AUSTRALIA.

Sydney—Examination of Rats.

The following information was taken from the bulletin issued by the department of public health of New South Wales: During the two weeks ended March 30, 1912, 689 rats were examined for plague infection No plague-infected rats were found

The last case of human plague was reported May 29, 1909.

The last plague-infected rat was found April 25, 1910.

BRITISH EAST AFRICA.

Smallpox and Vaccination at Mombasa.

Consul Weddell, at Zanzibar, reports the occurrence of 5 cases of smallpox at Mombasa during the month of March, 1912. During the same period 4,500 persons were vaccinated The outbreak is believed to have originated in the Mecca pilgrimage.

EGYPT.

Cairo—Typhus Fever.

Consul Knabenshue reports the occurrence of 10 deaths from typhus fever at Cairo during the two weeks ended April 15.

GREAT BRITAIN AND IRELAND.

Typhus Fever.

At Belfast the American consul reports the occurrence of 1 death from typhus fever during the week ended April 6.

At Dublin Consul Adams resports a death from typhus fever during the week ended March 30

At Glasgow Consul McCunn reports a death from typhus fever for the week ended April 19.

GREECE.

Cerebrospinal Meningitis.

Vice Consul Melissinos at Athens reports the occurrence of 93 cases of cerebrospinal meningitis in Greece during the week ended May 4. The cases occurred at 21 localities. Of the 93 reported cases 17 occurred at Athens and 7 at Piraeus, the port of Athens.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapuleña, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred February 9, 1912; 2 fatal cases February 25, 1912; and a fatal case March 18, 1912. During the week ended March 2, 1912, 49 plague-infected rats were found. The last plague-infected rat was found April 17, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague-infected rats were reported found February 29, 1912.

Honolulu—Plague-prevention Work.

Chief Quarantine Officer Trotter reports:

Week ended April 27, 1912.

Total rats and mongooses taken	460
Rats trapped	419
Mongooses trapped	11
Rats found dead (*Mus norvegicus*)	1
Rats killed by sulphur dioxide	29
Rats examined bacteriologically	363
Classification of rats trapped:	
Mus alexandrianus	52
Mus musculus	108
Mus norvegicus	47
Mus rattus	212
Average number of traps set daily	1,720

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended March 30, 1912, 89 deaths from cholera and 133 from plague were reported at Calcutta; in all Bengal, 3,925 cases of plague with 3,455 deaths; in all India, 16,028 cases of plague with 13,940 deaths.

ITALY.

Catania—Typhus Fever.

The American consul reports the occurrence of 2 [illegible]hs from typhus fever at Catania during the 2 weeks ende

Examination of Emigrants.

Surg. Geddings at Naples reports:
Vessels inspected at Naples and Palermo week ended May 4, 1912.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
Apr. 30	Oceania	New York	1,993	250	2,180
30	Canada	do	1,090	180	1,320
May 1	Cretic	Boston	859	120	1,050
3	Berlin	New York	1,734	220	2,150
	Total		5,676	770	6,700

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 1	Oceania	New York			
1	Canada	do	679	600	450
2	Cretic	Boston			
4	Berlin	New York	341	250	125
	Total		1,020	850	575

JAPAN.

Plague in Formosa.

Consul Reat at Tamsui reports the occurrence of 66 cases of plague with 56 deaths in the island of Formosa during the 4 weeks ended April 13, 1912.

JAVA.

Batavia—Typhus Fever.

Consul Rairden reports the occurrence of 2 cases of typhus fever with 1 death at Batavia during the week ended April 6.

MEXICO.

Typhus Fever.

The American consul reports the occurrence of a death from typhus fever at Matamoras during the week ended May 12.

Puerto Mexico—Yellow Fever.

Acting Assistant Surgeon Thompson reports the occurrence May 25 of a death from yellow fever at Puerto Mexico.

Yellow Fever at San Juan Bautista.

The American consul at Frontera reported May 25 that informa-
n had been received of the occurrence of four additional cases of
ow fever with 1 death at San Juan Bautista.

RUSSIA.

Typhus Fever.

Consul General Snodgrass at Moscow reports the occurrence of a death from typhus fever during the week ended April 20.

The American consul at Omsk reports 1 case of typhus fever for the week ended April 11.

TURKEY IN ASIA.

Basra—Plague on Vessel.

The steamship *Adalia* arrived April 10 at Basra with two cases of plague on board The cases were bacteriologically verified. On April 12 a third case of plague occurred among the crew of the vessel. The original port of departure of the *Adalia* was New Castle. The vessel called at Bushire, on the Persian Gulf At Bushire 78 cases of plague with 51 deaths were reported during the week ended April 6 and during the week ended April 13, 110 cases with 84 deaths.

VENEZUELA.

La Guaira—Yellow Fever in Vicinity.

Acting Assistant Surgeon Stewart reports: During the week ended April 30 a death from yellow fever was reported at Maiquetia, a suburb of La Guaira.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED MAY 31, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General. Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Apr. 1-6	3	2	
Bombay	Apr. 14-27	13	9	
Calcutta	Mar. 24-30		89	
Madras	Apr. 14-27	7	5	
Moulmine	Apr. 1-6	8	7	
Indo-China:				
Saigon	Mar. 19-31	90	60	
Do	Apr. 1-15	110	69	And vicinity.

YELLOW FEVER.

Brazil:				
Manaos	Apr. 28-May 4		2	
Canal Zone:				
Culebra Island Quarantine Station.	Mar. 2-4	1	1	From s. s. Chile from Guayaquil.
Mexico:				
Puerto Mexico	May 25		1	
San Juan Bautista	...do	4	1	
Venezuela:				
Caracas	Mar. 1-31		4	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended May 31, 1912.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Apr. 14-27	339	320	
Calcutta	Mar. 24-31		133	
Karachi	Apr. 14-27	213	190	
Indo-China:				
Saigon	Mar. 19-31	11	5	
Do	Apr. 1-15	10	4	
Japan:				
Formosa	Apr. 1-13	27	23	
Java:				
Pasoeroean residency	Apr. 17-13	5	4	
Mauritius	May 15-21	10	7	
Persia:				
Bushire	Apr. 1-13	188	135	
Mohammerah	Apr. 3[1]	1		
Straits Settlements:				
Singapore	Apr. 7-13	2	2	
Turkey in Asia:				
Basra	Apr. 10-12[2]	3		From S. S. Adalia from Newcastle.

SMALLPOX.

British East Africa:				
Mombasa	Mar. 1-31	5		
Brazil:				
Para	Apr. 21-May 4	4	1	
Canada:				
Quebec	May 12-18	6		
Vinal Haven	May 17	7		5 miles from Eastport, Me.
Ceylon:				
Colombo	Apr. 7-13	1		
Egypt:				
Cairo	Apr. 9-29	6	1	
France:				
Marseille	Apr. 1-30		2	
Paris	Apr. 14-May 4	2		
Germany	Apr. 21-27	6		Additional.
Do	Apr. 28-May 11	34		
Great Britain:				
Bradford	Apr. 28-May 4	1		
Bristol	May 5-11	1		
India:				
Bombay	Apr. 14-27	210	134	
Calcutta	Mar. 24-30		6	
Madras	Apr. 14-27	16	6	
Indo-China:				
Saigon	Mar. 19-31	5	2	
Do	Apr. 1-15	7	2	
Italy:				
Leghorn	May 5-11	3		
Naples	Apr. 28-May 11	3		
Palermo	Apr. 28-May 4	9	3	
Turin	May 6-12	1		
Java:				
Batavia	Apr. 7-13	5	2	
Mexico:				
Guadalajara	May 5-11	1	1	
Juarez	May 12-18	3		
Mazatlan	May 8-14		1	
Mexico	Mar. 24-Apr. 6	32	20	
San Luis Potosi	Mar. 9-16		2	
Tapachula	Apr. 28-May 4		1	
Portugal:				
Lisbon	do	2		
Russia:				
Moscow	Apr. 14-20	3	1	
Odessa	Apr. 21-27	2		
Riga	Apr. 21-May 4	7		
St. Petersburg	Apr. 21-27	20	6	

[1] From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, May 8, 1912.

[2] Bulletin Quarantenaire d'Egypte, May 9, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended May 31, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Spain:				
Almeria	Apr. 1-30		1	
Barcelona	Apr. 27-May 3		1	
Seville	Apr. 24-30		2	
Valencia	Apr. 29-May 11	37	2	
Turkey in Asia:				
Beirut	Apr. 14-May 4	45		
Turkey in Europe:				
Constantinople	Apr. 29-May 12		17	
Venezuela:				
Caracas	Apr. 1-30	3		

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAY 24, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22 deaths, 12: mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	July 2-15: Cases, 5; deaths, 4, p. 1300, Vol. XXVI.
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, vol. 1.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-Mar. 30	128	104	
Bombay	Apr. 7-13	9	8	
Calcutta	Nov. 5-Mar. 23		1,001	
Madras	Nov. 26-Apr. 6	549	447	Madras Presidency Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-Feb. 29: Cases, 18,267; deaths, 11,563.
Moulmine	Feb. 18-Mar. 30	13	11	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Feb. 29	104	86	
Indo-China:				
Saigon	Nov. 20-Mar. 18	1,544	1,082	
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 24, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands				Third quarter, 1911: Manila, 1, fatal case; Provinces, 27 cases and 22 deaths. Fourth quarter, 1911: Manila, no case and no death; Provinces, 22 cases, 20 deaths.
Province—				
Union	Oct. 29–Dec 4	5	5	
Roumania				Total Sept. 9–Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11–Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31–Nov. 28	21	1	
Dolìju	Nov. 6–Dec. 13	19	4	
Jalonitza	Oct. 31–Nov. 28	4		
Konstanza	Oct. 30–Nov. 28	8		
Prahova	Nov. 6–23	1	1	
Talomita	do	2		
Tulcea	Nov. 24–Dec. 13	15	1	
Servia				Total year 1911: Cases ,95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26–Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5–Mar. 24		1,244	
Straits Settlements:				
Singapore	Nov. 5–Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13–Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25–Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25–Dec. 21	71	20	
Bizerta district	Nov. 25–Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16–Dec. 30, 1911; Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6–Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2–Apr. 8	46	14	
Aleppo	Jan. 26–Apr. 20	46	29	
Amara	Oct. 15	1	1	
Basra	Oct. 22–28	14	10	
Erzeroum, vilayet	Sept. 11–16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20–28	10	10	
Kharput	Nov. 19–Dec. 30	47	47	
Jiddah	Dec. 2–24	323	310	
Mekka	Dec. 4–24	905	879	Sept. 1–Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1–7	2	1	
Osmania	Dec. 1–6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14–26	29		
Trebizond and vicinity	Sept. 18–23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24–Feb. 3	8	2	
Durazzo	Dec. 7–13	2		
Janina	Jan. 14–22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6–19	4	3	In Serres.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 24, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Mar. 23–25	6	1	
Ceara	Jan. 1–Feb. 29		5	
Manaos	Nov. 19–Apr. 27		66	
Para	Mar. 3–9	2	2	Dec. 9–16: 1 fatal case.
Pernambuco	Jan. 1–Apr. 15		29	Apr. 2: Epidemic.
Rio de Janeiro	Mar. 17–Apr. 6	3	2	
Canal Zone:				
Culebra Island quarantine	Jan. 1–31	1		From a vessel from Guayaquil.
Chile:				
Tocopilla	Apr. 11	90	25	And vicinity. Apr. 20: Still present.
Ecuador:				
Bucay	Nov. 16–Feb. 29	7	2	
Duran	Dec. 1–Apr. 15	14	6	
Guayaquil	Nov. 16–Apr. 15	147	66	
Huigra	Feb. 1–29	1		
Milagro	Feb. 1–Apr. 15	16	7	
Naranjito	do	6	4	
Yaguachi	Feb. 1–29	1		
Mexico:				
Espita	Dec. 31–Jan. 6	1		
Kambul, hacienda	Feb. 21–27		7	
Maxcanu	Dec. 31–Jan. 6	1		
Merida	Nov. 12–Mar. 23	20	9	Total Aug. 1, 1911–May 2, 1912: Cases, 66; deaths, 30.
Puerto Mexico (Coatzacoalcos).	Feb. 28		1	
Salina Cruz	Feb. 4–7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
San Juan Bautista	May 11	1		
Temax	Dec. 31–Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19–25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16–Feb. 15	30		Dec. 1–30, 10 deaths, and Jan. 15–Feb. 29, 8 deaths, including previous reports.
La Guaira	Mar. 17–Apr. 1	2	2	
Macuto	Mar. 16–19	1	1	
Maiquetia	Feb. 24–Apr. 30	4	4	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
Barbados—				
Bridgetown	Apr. 27	1	1	From steamship Francis, from Para.
St. Vincent	Feb. 19	1		
At sea	Dec. 17–23	1	1	On a vessel en route from Manoas to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096, Vol XXVI.
Arabia:				
Aden	Mar. 5–25	2	1	
Azores:				
Fayal	Jan. 10			Still present.
Teceira	do			Do.
Brazil:				
Bahia	Sept. 1–30		2	
Para	Dec. 24–Apr. 20	24	15	
Pernambuco	Oct. 1–Feb. 29		9	
Rio de Janeiro	Nov. 12–Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15–25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12–Apr. 6	24	11	
Pisagua	Nov. 1–30	8		
China:				
Amoy	Jan. 13		1	
Chaochowfu	Mar. 10–Apr. 13			Present.
Hongkong	Dec. 9–Apr. 13	178	157	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 24, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1,817; deaths, 1,324. Dec. 31-Mar. 2: Cases, 99; deaths, 95.
Pasoeroean Residency, Malang District.	Nov. 12-Apr. 6	147	100	
Soerabaya	Oct. 17-27	2		
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Reports not available because of revolution.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Cairo	Apr. 22-25	2	1	
Alexandria	Mar. 22	1	1	
Provinces—				
Assiout	Jan. 1-Apr. 24	62	40	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	do	31	19	
Behera	Jan. 1-Apr. 15	5	3	Sept. 11-16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16-Apr. 20	30	9	
Fayoum	Jan. 1-Apr. 24	3	1	
Galioubeh	Jan. 1-Apr. 23	5	3	Oct. 5-Dec. 26: Case, 1.
Garbieh	Jan. 1-Apr. 24	24	8	
Carchieh	Apr. 21-22	6	4	
Girgeh	Mar. 28	1	1	
Kena	Jan. 1-Apr. 25	96	73	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2-Apr. 23	9	2	
Minieh	Jan. 1-Apr. 23	26	6	Dec. 13: Case, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo
Great Britain:				
Liverpool	Apr. 27-30	1	1	In the Royal Southern Hospital, from s. s. Italian Prince, which arrived at Liverpool Apr. 19, laden with fruit and grain from Mediterranean ports.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-Apr. 13	851	744	
Calcutta	Nov. 11-Mar. 23		329	
Karachi	Nov. 26-Apr. 13	781	670	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Feb. 29	166	158	
Bombay Presidency and Sind.	Oct. 29-Mar. 23	58,396	42,824	
Madras Presidency	do	10,129	7,869	
Bengal	do	37,491	31,764	
United Provinces	do	86,612	76,987	
Punjab	do	10,541	8,082	
Burma	do	1,428	1,302	
Eastern Bengal and Assam.	Jan. 1-Feb. 24	2	2	
Central Provinces	Oct. 29-Mar. 23	26,600	21,144	
Coorg	do	88	52	
Mysore State	do	8,631	6,688	
Hyderabad State	do	25,820	23,394	
Central India	do	9,096	7,453	
Rajputana and Ajmere Merwara.	do	1,533	1,234	
Kashmir	Feb. 3-Mar. 23	114	51	
North West Province	Oct. 29-Feb. 24	2	2	Total for India, Oct. 29-Mar. 23: Cases, 276,483; deaths, 228,848. Total year 1911: Cases, 828,535; deaths, 691,849.
ndo-China:				
Saigon	Nov. 13-Mar. 4	33	5	
Japan:				
Formosa	Mar. 7-30	52	40	
Nagasaki	Apr. 20	1		On the s. s. Tacoma Maru, from Hongkong and Shanghai.
Mauritius	Nov. 3-Mar. 14	92	54	
Persia:				
Bushire	Feb. 4-Mar. 30	134	83	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 24, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Peru:				
Departments—				
Callao	Oct. 1-21	1		City, in November, 1 case; in January, 3 cases with 2 deaths; Mar. 1-26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Apr. 10, 22 cases in the lazaretto at Trujillo. Apr. 22 still present.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Manila				Apr. 6, a fatal case of pneumonic form in a member of the crew on s. s. Zafiro, arrived Apr. 4 from Hongkong.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on p. 2098, Vol. I.
Siam:				
Bangkok	Nov. 4-Mar. 23		5	
South Africa:				
Durban				Total: Jan. 14-Apr. 19, cases 27, deaths 22.
Straits Settlements:				
Singapore	Nov. 5-Mar. 16	29	25	
Turkey in Asia:				
Basra	Feb. 13	1	1	A stoker on s. s. Nicomedia from Bushire.
Jiddah	Jan. 13-Mar. 27	16	9	
Venezuela:				
Caracas	Mar. 12-Apr. 22	6	2	
West Indies:				
Trinidad	Apr. 2-May 1	6	4	
At sea	Mar. 1-11	1	1	On s. s. Macedonia from Bombay to Aden.
Do	Apr. 1	1	1	Pneumonic on s. s. Loongsang, en route from Hongkong to Manila.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1-30		1	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Apr. 8	22	10	And vicinity.
Argentina:				
Buenos Aires	Jan. 1-31		2	Oct. 1-31, 6 deaths. No deaths in November or December, 1911.
Rosario	Oct. 1-Jan. 31		40	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-20	2		
Budapest	Jan. 4-10	25		
Galicia	Dec. 24-Apr. 13	30	1	
Krain	Jan. 14-20	7		
Trieste	Dec. 3-Apr. 6	2		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14-Mar. 9	3		
Vienna	Mar. 25-30	1		
Brazil:				
Bahia	July 1-31		1	
Para	Mar. 24-Apr. 20	6	4	Case Mar. 30 from Alagoas.
Pernambuco	Oct. 1-Apr. 15		838	
Rio de Janeiro	Nov. 26-Apr. 6	31	1	
Santos	Dec. 12-23		1	
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 16	5		
Nelson	Dec. 24-30	1		
Vancouver	Apr. 14-20	1		
Victoria	Feb. 4-10	1		
Manitoba—				
Winnipeg	Jan. 14-Apr. 20	4		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 24, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
New Brunswick—				
Summerstown	Apr. 12			Epidemic; 10 miles from Cornwall.
Nova Scotia—				
Halifax	Mar. 24-Apr. 6	2		
Ontario—				
Hamilton	Apr. 14-27	16		
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-May 11	105	1	
Sarnia	Oct. 17-Mar. 23	43		
Toronto	Jan. 6-Apr. 20	5	1	
Windsor	Feb. 4-Mar. 16	8		
Quebec—				
Montreal	Dec. 17-May 11	32		
Quebec	Dec. 10-May 11	289	2	
Yukon—				
Dawson	Apr. 1-6	1		
Ceylon:				
Colombo	Nov. 12-Feb. 10	3		And vicinity
Chile:				
Iquique	Dec. 10-Mar. 16	4	2	
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Apr. 13	70		
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chaochowfu	Mar. 30			Present.
Chenghai	Jan. 29-Apr. 13			Do.
Chungking	Nov. 18-Apr. 6			Do.
Dalny	Mar. 3-Apr. 6	11	2	
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-Mar. 30	706	523	
Kityang	Jan. 21-Apr. 13			Do.
Nanking	Dec. 10-Apr. 20			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12-Apr. 6	55	15	
Egypt:				
Cairo	Dec. 10-Mar. 25	10	1	
Port Said	Jan. 30-Feb. 4	1		
France:				
Havre	Mar. 10-16		4	
Marseille	Jan. 1-Mar. 31		5	Nov. 1-30, 1 death.
Paris	Dec. 3-Apr. 27	123	2	
Germany				Total, Dec. 31-Apr. 27; cases, 129.
Hamburg	Jan. 21-Apr. 27	7		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bristol	Jan. 29-Feb. 3	2		
Liverpool	Mar. 17-Apr. 17	2	1	Case Apr. 13, an American from the s. s. Arabic.
London	Jan. 14-Apr. 20	10	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-Mar. 9	2		
India:				
Bombay	Nov. 19-Apr. 13	908	398	
Calcutta	Nov. 19-Mar. 23		31	
Karachi	Apr. 1-6	1	1	
Madras	Nov. 26-Apr. 13	195	77	
Rangoon	Oct. 1-Feb. 29	220	55	
Indo-China:				
Saigon	Nov. 13-Mar. 18	38	7	
Italy:				
Genoa	Dec. 1-Apr. 15	47	2	
Leghorn	Dec. 16-May 4	110	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-Apr. 27	103	1	
Palermo	Nov. 26-Apr. 27	2,643	898	
Rome	Jan. 1-Mar. 31	31	3	
Turin	Jan. 15-Apr. 7	2		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 24, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Formosa	Mar. 3-16	3		
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	2	1	Jan. 20, 1 case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12-18	1		
Nogahama	Mar. 17-23	1		On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-Apr. 13	8	4	
Juarez	Dec. 19-May 11	17	5	
Magdalena	Dec. 23-Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-Apr. 30		13	Mar. 16, 25 cases in the lazaretto.
Mexico	Nov. 26-Mar. 23	224	101	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	Mar. 23, present in vicinity.
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Mar. 9	8	5	
Tampico	Dec. 1-Apr. 10		16	
Tapachula	Nov. 1-Jan. 31		18	
Philippine Islands				Third quarter, 1911: Manila, 9 cases; no deaths. Fourth quarter, 1911: 38 cases.
Manila (on arriving vessel)				Apr. 1 to 6, present on the steamers Serantes and Sotolongo; Apr. 2-9, 8 cases among the crew of the United States Army transport Warren, from ports in China and Japan.
Portugal:				
Lisbon	Dec. 9-Apr. 20	56		
Roumania	Jan. 1-31	2,935	143	Total: Jan. 1-Feb. 29, cases, 5,847; deaths, 247.
Russia:				
Batum	Dec. 1-Mar. 31	2		
Libau	Dec. 17-Apr. 28	3		
Moscow	Nov. 19-Apr. 13	72	9	
Odessa	Nov. 26-Apr. 20	35	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-Apr. 16	62		Oct. 1-Jan. 31: Deaths, 10.
St. Petersburg	Nov. 19-Apr. 20	211	48	
Warsaw	Nov. 5-Mar. 16	414	200	
Siam:				
Bangkok	Nov. 5-Mar. 23		2,175	
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-Apr. 6	5		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Barcelona	Feb. 6-Apr. 1		2	
Cadiz	Nov. 1-Mar. 31		29	
Madrid	Dec. 1-Mar. 31		16	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-Mar. 31		10	
Valencia	Dec. 3-Apr. 20	398	16	
Straits Settlements:				
Penang	Feb. 11-17	1		
Singapore	Nov. 19-Apr. 6	38	15	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 24, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Switzerland:				
Cantons—				
Aargau	Apr. 7-13	1		
Oberwalden	Jan. 14-20	1		
St. Gall	Mar. 30-Apr. 6	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Apr. 13		54	
Turkey in Asia:				
Beirut	do	1,500	107	
Turkey in Europe:				
Constantinople	Dec. 4-Apr. 28		199	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Jan. 15	11	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Apr. 20	163,084	63										1	
Do	Apr. 27		64								1	1		
Aguascalientes	May 12	40,000	82	3					5		1	1	16	
Aix-la-Chapelle	Apr. 13	157,695	46	7								1		2
Do	Apr. 20	157,702	42	3							1			4
Amsterdam	May 4	566,131	148	26								2	5	1
Antwerp	Apr. 20	316,604	89	8							2		11	1
Do	Apr. 27		79	14						1	1	3	6	1
Athens	May 4	250,010	76	14								1		1
Barcelona	May 3	591,272	154	21				1		1	1	2		
Barmen	Apr. 20	171,000	32	4								2		1
Barranquilla	May 4	60,000	13	2						3				
Batavia	Apr. 6	217,630	8					1	1					
Beirut	Apr. 27	80,000	20							5				
Belfast	..do	391,051	135	25								2		4
Do	May 4		134	24							1			8
Belgrade	Apr. 28	90,050	31								2		1	
Berlin	Apr. 20	2,067,928	596	87							10	14	10	7
Do	Apr. 27		597	92						2	5	11	10	7
Birmingham	May 4	842,512	216									1	4	5
Bombay	Apr. 20	979,445	918	48	144	3		53					12	
Bremen	...do	246,850	81	13							2	5	2	
Birmingham	Apr. 27	842,512	217								1	1	4	12
Bremen	..do	246,850	80	11								2	4	3
Brunswick	Apr. 13-20.	145,000		2							5	9		
Do	Apr. 27-May 4.			5							10	17		
Brussels	May 4	739,684	229	21									2	1
Budapest	Apr. 13	1,000,000									5			
Do	Apr. 20									1	2	3	1	2
Cairo	Apr. 15	689,439	412	25				1	6	3		3	3	
Do	Apr. 22		433	23	1				9	4		4	3	
Calcutta	Mar. 30	890,493	598	34	133	89		6					1	
Catania	May 10	207,000	79	3							2		3	
Chemnitz	Apr. 20	300,019	83	6								2	1	3
Cienfuegos	do	33,578	19	1						1				

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Coburg	Apr. 20	24,174	12	3								2		
Cologne	do	527,663	129	23									1	
Do	Apr. 27	528,738	149	28								2		
Colombo	Apr. 6	227,026	105	10						5				
Do	Apr. 13		116	14						7				
Constantinople	May 5	1,000,000	263	32				8		6	3	3	12	
Dresden	Apr. 20	555,300	128	17						1	1	3		
Dublin	do	406,536	217	39						1	2	4	13	2
Do	Apr. 27		192	21						3	1	1	16	2
Do	May 4		208	38							4	4	15	4
Dundee	do	171,006	55	5									8	1
Edinburgh	do	321,200	94	8								1	9	3
Erfurt	Apr. 27	126,560	32	1								1		1
Frankfort-on-Main	do	425,000	88									3		1
Georgetown	May 4	57,577	56	4						2				
Glasgow	May 10	785,600	257								1		14	3
Gothenburg	May 4	170,000	53	11								1		1
Guadalajara	May 11	119,468	127					1			1			
Hamburg	May 4	953,079	275	32						2	6	4		4
Havre	do	136,159	55	12						1				
Hongkong	Apr. 6	336,488			29			24		2				
Do	Apr. 13				36			21		4				
Hull	May 4	282,987								1				
Karachi	Apr. 20	157,290	162		109								3	
Leeds	May 4	445,568	119	16						1	1	1	2	
Leipzig	Apr. 27	605,755	154	26							1			
Liege	do		43	4						1	1		1	
Leith	May 4	81,000	24	1									3	
London	do	7,340,119	1,734							2	4	7	28	56
Lubeck	May 4	100,000	24	4						1				
Madras	Apr. 20	518,660	334			4		4		1			3	
Magdeburg	Mar. 9-Apr. 13	285,557	617	55						3		11	1	
Manaos	Apr. 20	52,000	46	8			5							
Do	Apr. 27		37	1			4							
Matamoros	May 12	15,000	10	3					1					
Montreal	May 18	466,197	172	27						2	2			5
Moscow	Apr. 20	1,500,000	886	93				1	1	4	13	4	10	9
Nantes	Apr. 21	170,535	74	21						1				
Do	Apr. 28		72	10						1				
Newcastle-on-Tyne	May 4	266,671	73	8								1		
Nottingham	Apr. 24	260,000	81	4							1		8	1
Ottawa	May 11	90,000	38	1										
Palermo	May 4	340,000	131	5				3		3	1			
Para	Apr. 27	185,000	100	9			1	2						
	May 4	185,000	87	12										
Penang	Apr. 13	102,167	74	18								1		
Port Said	Apr. 22	52,811	23	1								1	1	
Port of Spain	Apr. 27	60,000	31	7	1					1			1	
Prague	Apr. 20	225,817	91	15						1		1	4	2
Do	Apr. 27		102	27						4	1		2	
Rangoon	Apr. 6	293,316	177		8	4		19						
Rotterdam	May 4	438,774	108							1	2			
St. Petersburg	Apr. 27	1,962,400	946	156				6		13	7	8	24	11
San Luis Potosi	Mar. 16	82,946	48	4				2		1				
Saigon	Mar. 25	220,000	18		2	15		1						
Do	Mar. 31		49		3	45		1						
Do	Apr. 9		48		2	45		1						
Singapore	Apr. 6	303,328	196	22				2		1				
South Shields	May 4	109,676	26									1		
Stettin	Apr. 27	240,000	68	2								2	1	
Stoke-on-Trent	May 4	237,153	70	2								1	1	1
Toronto	May 4-11	392,000	244	11							4	12	1	4
Trieste	Apr. 27	235,999	98							1	1		1	
Tripoli	Apr. 21	50,000	39	2						3				
Do	Apr. 28		67	4					9	9				
Turin	May 5	430,770	147	21						1			4	
Valencia	May 4	235,000	94	6					1					
Vienna	Apr. 20	2,081,335	732	126							3	10	9	4

MORTALITY—FOREIGN AND INSULAR COUNTRIES AND CITIES (Untabulated).

FORMOSA.—Four weeks ended April 13, 1912. Population 3,341,217. The deaths include diphtheria 2, plague 56, typhoid fever 11.

FRANCE—*Calais.*—Month of April, 1912. Population 80,000. Total number of deaths from all causes 121, including diphtheria 1, tuberculosis 24, typhoid fever 1.

Roubaix.—Month of April, 1912. Population 122,723. Total number of deaths from all causes 153, including diphtheria 1, tuberculosis 33.

GREAT BRITAIN.—Week ended April 27, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 14.1 per 1,000 of the population which is estimated at 17,639,816.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 20.3 per 1,000 of the population which is estimated at 1,157,014. The lowest rate was recorded at Armagh viz, 6.9, and the highest at Lurgan, viz, 30.1 per 1,000 of the population.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 16.2 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Govan, viz, 8.1, and the highest at Kilmarnock, viz, 22.5 per 1,000 of the population. The total number of deaths reported from all causes was 679, including diphtheria 4, measles 32, scarlet fever 5.

ITALY—*Catania.*—Month of April, 1912. Population 127,000. Total number of deaths from all causes 159, including scarlet fever 11, tuberculosis 12, typhoid fever 1.

Milan.—Month of April, 1912. Population, 602,236. Total number of deaths from all causes 149, including diphtheria 1, measles 3, scarlet fever 1, tuberculosis 132, typhoid fever 6.

PORTUGUESE EAST AFRICA—*Lourenço Marquez.*—Month of January, 1912. Population 10,000. Total number of deaths from all causes 31, including tuberculosis 4.

Month of February, 1912. Total number of deaths from all causes 27, including tuberculosis 8.

SPAIN—*Almeria.*—Month of April, 1912. Population 50,910. Total number of deaths from all causes 114, including smallpox 1, tuberculosis 9, typhus fever 3.

Madrid.—Month of April, 1912. Population 584,117. Total number of deaths from all causes 1,143, including diphtheria 14, measles 48, scarlet fever 1, tuberculosis 118, typhoid fever 12.

Seville.—Month of April, 1912. Population 158,235. Total number of deaths from all causes 346, including diphtheria 7, measles 7, smallpox 2, tuberculosis 48, typhoid fever 5.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General.
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS

VOL. XXVII. JUNE 7, 1912. No. 23.

TENTH ANNUAL CONFERENCE OF STATE AND TERRITORIAL HEALTH AUTHORITIES WITH THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE, WASHINGTON, JUNE 1, 1912.

The tenth annual conference of the State and Territorial health authorities of the United States with the Public Health and Marine-Hospital Service, provided for by section 7 of an act of Congress approved July 1, 1902, was held in Washington, June 1, 1912.

The following resolutions were adopted by the conference:

MORBIDITY REPORTS.

In order to make available to the health authorities of the States, Territories, and insular possessions of the United States, for their use and guidance in the protection of their respective communities, information regarding the prevalence and geographic distribution of certain diseases, and the occurrence of outbreaks and epidemics, be it resolved:

1. That the health authorities of the States, Territories, and insular possessions of the United States, including the District of Columbia, shall notify the Surgeon General of the Public Health and Marine-Hospital Service immediately by telegraph (collect) and letter upon the occurrence of a case or cases of cholera, yellow fever, typhus fever, plague, or Rocky Mountain spotted or tick fever, giving the number and location of cases, and that said authorities shall render monthly reports of the number of cases notified of smallpox, leprosy, scarlet fever, measles, diphtheria, typhoid fever, poliomyelitis, cerebrospinal meningitis, dysentery, Rocky Mountain spotted or tick fever, and other diseases notifiable in their respective jurisdictions; said monthly reports to be made on or before the 20th day of each month for the preceding calendar month, and to give the distribution of cases of smallpox, leprosy, poliomyelitis, cerebrospinal meningitis, Rocky Mountain spotted or tick fever, and typhoid fever, by counties, or by counties and cities, or by towns (townships), or by towns (townships) and cities; and that when in a State one or more cities are excepted by statute, charter, or otherwise from reporting the occurrence of the notifiable diseases to the State department of health, and the State report therefore is exclusive of cases occurring in such cities, the cities thus excluded shall be enumerated.

2. That upon the occurrence of an unusual outbreak, or in the event of a sudden increase in the number of cases of smallpox, scarlet fever,

diphtheria, typhoid fever, poliomyelitis, cerebrospinal meningitis, or Rocky Mountain spotted or tick fever in any locality, the Surgeon General of the Public Health and Marine-Hospital Service shall be immediately notified by telegraph (collect) and letter of such unusual outbreak or sudden increase.

3. That in the primary notification of smallpox to local health authorities the date when the patient was last vaccinated and whether the disease is of the benign or virulent type shall be stated; that in all outbreaks of smallpox in which one or more deaths occur a report of such data as can be obtained regarding the origin of the first case or cases and the history of the outbreak shall be made to the Surgeon General after the subsidence of said outbreak; that all reports of cases of smallpox made by the State or other health authorities to the Surgeon General shall be divided into four classes:

(*a*) Those vaccinated within a period of seven years preceding the attack.

(*b*) Those whose last vaccination occurred more than seven years antedating the attack.

(*c*) Those who have never been successfully vaccinated.

(*d*) Those in which no definite history is to be obtained.

4. That in reporting the occurrence of cases of leprosy such data as it is possible to obtain regarding the patient's history shall be given.

5. That the Surgeon General shall, under the direction of the Secretary of the Treasury, pursuant to section 4 of an act approved February 15, 1893, entitled "An act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service," compile and publish the reports forwarded in compliance with the foregoing in the Public Health Reports for the information of the health authorities of the several States, Territories, and insular possessions, including the District of Columbia.

PHENOL COEFFICIENT OF DISINFECTANTS.

Resolved, That the United States Public Health and Marine-Hospital Service Hygienic Laboratory Standard Method for the determination of the phenol coefficient of disinfectants be recommended to the several State boards of health as the standard method; that all regulations regarding disinfectants be based upon this standard; and that the phenol coefficient be required to be stated on the label of each package containing such disinfectant.

CONTROL OF TYPHOID FEVER.

Resolved, That a committee be appointed to recommend a working plan for the control of typhoid fever and practical measures which can be generally enforced for the prevention of this disease.

Resolved, That all cases of typhoid fever should be placed in properly constructed and conducted hospitals, unless it be possible to isolate the patient at home with a trained nurse in charge.

CEREBROSPINAL MENINGITIS.

Resolved, That the Surgeon General appoint a committee to report further on the subject of cerebrospinal meningitis at the next meeting.

STATE AND INSULAR HEALTH AUTHORITIES OF THE UNITED STATES.

ALABAMA.[1]

State health officer:

W. H. Sanders, M. D., Montgomery.

State board of censors of the medical association, acting as a State committee of public health:

W. H. Sanders, M. D., chairman, Montgomery.
P. B. Moss, M. D., State bacteriologist and pathologist, Montgomery.
H. G. Perry, M. D., registrar of vital and mortuary statistics, Montgomery.
W. H. Sanders, M. D., State health officer, Montgomery.
D. F. Talley, M. D., Birmingham.
L. W. Johnston, M. D., Tuskegee.
M. B. Cameron, M. D., Eutaw.
Glenn Andrews, M. D., Montgomery.
S. G. Gay, M. D., Montgomery.
I. L. Watkins, Montgomery.
S. W. Welch, M. D., Talladega.
W. G. Harrison, M. D., Birmingham.
V. P. Gaines, M. D., Mobile.

ARIZONA.

State board of health:

Gov. George W. P. Hunt, president, Phoenix.
Attorney General George Purdy Bullard, vice president, Phoenix.
R. N. Looney, M. D., secretary and superintendent of health, Prescott.

ARKANSAS.

State board of health:

J. P. Runyan, M. D., president, Little Rock.
R. L. Smith, M. D., Russellville.
T. J. Stout, M. D., Brinkley.
O. L. Williamson, M. D., Marianna.
Charles Doke, M. D., Hot Springs.
J. G. Eberle, M. D., Fort Smith.

Secretary state board of health:

Morgan Smith, M. D., Little Rock.

CALIFORNIA.

State board of health:

Martin Regensburger, M. D., president, San Francisco.
W. Le Moyne Wills, M. D., vice president, Los Angeles.
William F. Snow, M. D., secretary and executive officer, Sacramento.
Wallace A. Briggs, M. D., Sacramento.
F. K. Ainsworth, M. D., San Francisco.
O. Stansbury, M. D., Chico.
James H. Parkinson, M. D., Sacramento.

COLORADO.

State board of health:

Sherman Williams, M. D., president.
Jacob Campbell, M. D., Boulder, vice president.
Paull S. Hunter, M. D., secretary and executive officer, Denver.
Crum Epler, M. D., treasurer, Pueblo.
S. R. McKelevey, Denver.
Charles Morrison, M. D., Colorado City.
James Rae Arneill, M. D., Denver.
W. C. K. Berlin, M. D., Denver.

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[1] The Medical Association of the State of Alabama is the State board of health and elects an executive officer known as the State health officer.

CONNECTICUT.

State board of health:

Edward K. Root, M. D., president, Hartford.
Joseph H. Townsend, M. D., secretary and executive officer, Hartford.
T. H. McKenzie, C. E., Southington.
Lewis Sperry, Esq., South Windsor.
Albert W. Phillips, M. D., Derby.
Arthur J. Wolff, M. D., Hartford.
Louis J. Pons, M. D., Roxbury.

DELAWARE.

State board of health:

William P. Orr, M. D., president, Lewes.
A. E. Frantz, M. D., secretary and executive officer, Wilmington.
J. W. Clifton, M. D., Smyrna.
W. F. Haines, M. D., Seaford.
J. A. Draper, M. D., Wilmington.
E. R. Steele, M. D., Dover.
C. A. Ritchie, M. D., Middletown.

DISTRICT OF COLUMBIA.

Health officer:

W. C. Woodward, M. D., Washington.

FLORIDA.

State board of health:

E. M. Hendry, president, Tampa.
H. L. Simpson, M. D., Pensacola.
John G. Christopher, Jacksonville.

State health officer and secretary State board of health:

Joseph Y. Porter, M. D., Jacksonville.

GEORGIA.

State board of health:

Samuel C. Benedict, M. D., president, Athens.
Charles Hicks, M. D., first vice president, Mount Vernon.
Howard J. Williams, M. D., second vice president, Macon.
H. F. Harris, M. D., secretary and director of laboratories, Atlanta.
W. W. Owens, M. D., Savannah.
A. P. Taylor, M. D., Thomasville.
M. S. Brown, M. D., Fort Valley.
James H. McDuffie, M. D., Columbus.
R. M. Harbin, M. D., Rome.
Giles Hathcock, M. D., Belton.
W. H. Doughty, M. D., Augusta.
Robert F. Maddox, Atlanta.

HAWAII.

Territorial board of health:

J. S. B. Pratt, M. D., president.
Attorney General Alexander Lindsay, jr.
F. C. Smith.
A. R. Keller.
D. Kalauokalani, sr.
George R. Carter.
W. C. Hobdy, M. D.

Secretary Territorial board of health:

K. B. Porter, Honolulu.

IDAHO.

State board of health:

George E. Hyde, M. D., president, Rexburg.
Ralph Falk, M. D., secretary and executive officer, Boise.
State Engineer A. E. Robinson.
Attorney General D. C. McDougall.
W. R. Hamilton, M. D., Weiser.

ILLINOIS.

State board of health:

George W. Webster, M. D., president, Chicago.
James A. Egan, M. D., secretary and executive officer, Springfield.
Charles J. Boswell, M. D., Mounds.
R. E. Niedringhaus, M. D., Granite City.
Walter R. Schussler, M. D., Orland.
P. H. Wessel, M. D., Moline.
Henry Richings, M. D., Rockford.

INDIANA.

State board of health:

Fred. A. Tucker, M. D., president, Noblesville.
T. Henry Davis, M. D., vice president, Richmond.
J. N. Hurty, M. D., Ph. D., secretary of board and State health commissioner, Indianapolis.
James S. Boyers, M. D., Decatur.
John R. Hicks, M. D., Covington.

IOWA.

State board of health:

Attorney General George Cosson, Des Moines.
State Veterinarian J. I. Gibson, Des Moines.
Lafayette Higgins, C. E., Des Moines.
G. F. Severs, M. D., Centerville.
B. L. Eiker, M. D., president, Leon.
Albert de Bey, M. D., Orange City.
T. U. McManus, M. D., Waterloo.
E. E. Richardson, M. D., Webster City.
G. A. Smith, M. D., Clinton.
G. A. Huntoon, M. D., Des Moines.
Henry Albert, M. D., director bacteriological laboratory, Iowa City.

Secretary and executive officer, State board of health:

Guilford H. Sumner, M. D., Des Moines.

KANSAS.

State board of health:

B. J. Alexander, M. D., president, Hiawatha.
C. D. Welch, vice president, attorney, Coffeyville.
Clay E. Coburn, M. D., Kansas City.
C. H. Lerrigo, M. D., Topeka.
V. C. Eddy, M. D., Colby.
M. F. Jarrett, M. D., Fort Scott.
C. W. Reynolds, M. D., Holton.
O. D. Walker, M. D., Salina.
H. L. Aldrich, M. D., Caney.
W. O. Thompson, M. D., Dodge City.

Secretary and executive officer, State board of health:

S. J. Crumbine, M. D., Topeka.

KENTUCKY.

State board of health:

John G. South, M. D., president, Frankfort.
J. N. McCormack, M. D., secretary and executive officer, Bowling Green.
H. S. Keller, M. D., Frankfort.
O. C. Robertson, M. D., Cynthiana.
Charles Z. Aud, M. D., Cecilian.
I. A. Shirley, M. D., Winchester.
Geo. T. Fuller, M. D., Mayfield.
W. W. Richmond, M. D., Clinton.

LOUISIANA.

State board of health:

Oscar Dowling, M. D., president, New Orleans.
Beverly W. Smith, M. D., vice president, Franklin.
T. T. Tarlton, M. D., Grand Coteau.
Herman Oechsner, M. D., New Orleans.
G. W. Gaines, M. D., Tallulah.
Thomas A. Roy, M. D., Mansura.
B. A. Ledbetter, M. D., New Orleans.

Secretary and treasurer, State board of health:

E. S. Kelly, M. D., New Orleans.

MAINE.

State board of health:

Charles D. Smith, M. D., president, Portland.
A. G. Young, M. D., secretary and executive officer, Augusta.
G. M. Woodcock, M. D., Bangor.
Richard H. Stubbs, M. D., Augusta.
Marshall P. Cram, Ph. D., Brunswick.
W. L. Haskell, M. D., Lewiston.
Eugene W. Goss, Auburn.

MARYLAND.

State board of health:

William H. Welch, M. D., president.
Marshall Langton Price, M. D., secretary and executive officer, 6 East Franklin Street, Baltimore.
James Bosley, commissioner of health, Baltimore.
Attorney General Edgar Allan Poe.
Nathan R. Sorter, M. D.
Edgar A. Jones, M. D.
Douglas H. Thomas, jr.

MASSACHUSETTS.

State board of health:

Henry P. Walcott, M. D., chairman, Cambridge.
Clement F. Coogan, Pittsfield.
Joseph A. Plouff, Ware.
Julian A. Mead, M. D., Watertown.
Hiram F. Mills, C. E., Lawrence.
Robert W. Lovett, M. D., Boston.
C. E. McGillicuddy, Worcester.

Secretary State board of health:

Mark W. Richardson, M. D., secretary and executive officer, Boston.

MICHIGAN.

State board of health:

Victor C. Vaughan, M. D., president, Ann Arbor.
Aaron R. Wheeler, M. D., vice president, St. Louis.
R. L. Dixon, M. D., secretary and executive officer, Lansing.
Charles M. Ranger, A. B., Battle Creek.
John H. Kellogg, M. D., Battle Creek.
Thomas M. Koon, M. D., Grand Rapids.
Edward L. Abrams, M. D., Hancock.

MINNESOTA.

State board of health:

W. A. Jones, M. D., president, Minneapolis.
B. J. Merrill, M. D., vice president, Stillwater.
H. M. Bracken, M. D., secretary and executive officer, St. Paul.
O. T. Sherping, M. D., Fergus Falls.
C. W. More, M. D., Eveleth.
C. Graham, M. D., Rochester.
F. F. Westbrook, M. D., Minneapolis.
R. O. Earl, M. D., St. Paul.
W. C. Chambers, M. D., Blue Earth.

MISSISSIPPI.

State board of health:

G. S. Bryan, M. D., president, Amory.
John Darrington, M. D., Yazoo City.
T. E. Ross, M. D., Hattiesburg.
E. A. Cheek, M. D., Arcola.
I. W. Cooper, M. D., Newton.
Theodore Borroum, M. D., Corinth.
S. E. Eason, M. D., New Albany.
M. J. Alexander, M. D., Tunica.
J. C. Armstrong, M. D., Water Valley.
W. W. Reynolds, M. D., Meridian.
W. W. Hall, M. D., Lumberton.
C. E. Catchings, M. D., Woodville.
J. R. Jiggitts, M. D., Canton.

Secretary board of health:

W. W. Smithson, M. D., Jackson.

MISSOURI.

State board of health:

Frank B. Fuson, M. D., president, Springfield.
[illegible]. P. Overholser, M. D., vice president, Nevada.
Frank B. Hiller, M. D., secretary, Jefferson City.
Ernest F. Robinson, M. D., Kansas City.
Ira W. Upshaw, M. D., St. Louis.
L. E. Bunte, M. D., St. Louis.
G. B. Schulz, M. D., Cape Girardeau.

MONTANA.

State board of health:

D. J. Donohue, M. D., president, Glendive.
State Veterinarian M. E. Knowles, D. V. S., vice president, Helena.
T. D. Tuttle, M. D., secretary of board and State health officer, Helena.
Governor Edwin L. Norris, Helena.
Attorney General Albert J. Galen, Helena.
C. E. K. Vidal, M. D., Great Falls.
C. T. Pigot, M. D., Roundup.

NEBRASKA.[1]

State board of health:

C. H. Aldrich, governor, Lincoln.
Grant Martin, attorney general, Lincoln.
J. W. Crabtree, superintendent of public instruction.

Board of secretaries:

C. P. Fall, M. D., president, Beatrice.
H. B. Cummins, M. D., vice president, Seward.
Porter F. Dodson, M. D., treasurer, Wilber.
E. Arthur Carr, M. D., secretary, Lincoln.

State health inspector:

W. H. Wilson, M. D., Lincoln.

NEVADA.

State board of health:

W. H. Hood, M. D., president, Reno.
S. L. Lee, M. D., secretary, Carson City.
O. P. Johnstone, M. D., Reno.

NEW HAMPSHIRE.

State board of health:

G. P. Conn, M. D., president, Concord.
James P. Tuttle, attorney general, Manchester.
Governor Robert P. Bass, Petersborough.
Frank E. Kittredge, M. D., Nashua.
Robert Fletcher, C. E., Hanover.

Secretary and executive officer, State board of health:

Irving A. Watson, M. D., Concord.

NEW JERSEY.

State board of health:

John H. Capstick, president, Boonton.
Bruce S. Keator, M. D., secretary and executive officer, Asbury Park.
George P. Olcott, East Orange.
William H. Chew, Camden.
Herbert W. Johnson, Haddonfield.
Richard C. Newton, M. D., Montclair.

NEW MEXICO.

State board of health and medical examiners:

J. F. Pearce, M. D., president, Albuquerque.
W. E. Kaser, M. D., vice president, Las Vegas.
J. A. Massie, M. D., secretary, Santa Fe.
William D. Radcliffe, M. D., treasurer, Belen.
F. F. Doepp, M. D., Carlsbad.
J. G. Moir, M. D., Deming.
L. G. Rice, M. D., Albuquerque.

NEW YORK.

Commissioner of health:

Eugene H. Porter, A. M., M. D., Albany.

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[1] The State board of health consists of the governor, the attorney general, and the superintendent of public instruction. The governor appoints four physicians to be secretaries, and a proper person to be State health ector.

NORTH CAROLINA.[1]

State board of health:

J. Howell Way, M. D., president, Waynesville.
Richard H. Lewis, M. D., Raleigh.
Edward C. Register, M. D., Charlotte.
J. E. Ashcraft, M. D., Monroe.
David T. Tayloe, M. D., Washington.
J. L. Ludlow, C. E., Winston-Salem.
W. O. Spencer, M. D., Winston-Salem.
Thomas E. Anderson, M. D., Statesville.
Charles O'H. Laughinghouse, Greenville.

Secretary and treasurer State board of health, and State health officer:

W. S. Rankin, M. D., Raleigh.

NORTH DAKOTA.

State board of health:

Attorney General Andrew Miller, president, Bismarck.
C. E. Bennett, M. D., vice president, Aneta.
J. Grassick, M. D., superintendent of health, Grand Forks.

OHIO.

State board of health:

Frank Warner, M. D., president, Columbus.
Oscar Hasencamp, M. D., vice president, Toledo.
James E. Bauman, acting secretary and executive officer, Columbus.
Josiah Hartzell, Ph. D., Canton.
R. H. Grube, M. D., Xenia.
John W. Hill, C. E., Cincinnati.
H. T. Sutton, M. D., Zanesville.
William T. Miller, M. D., Cleveland.

OKLAHOMA.[2]

State commissioner of health:

J. C. Mahr, M. D., Oklahoma City.

OREGON.

State board of health:

C. J. Smith, M. D., president, Pendleton.
Alfred Kinney, M. D., vice president, Astoria.
Calvin S. White, secretary and State health officer, Portland.
Prof. Emile F. Pernot, M. S., State bacteriologist, Portland.
Andrew C. Smith, M. D., Portland.
E. A. Pierce, M. D., Portland.
W. B. Morse, M. D., Salem.
E. B. Pickel, M. D., Medford.

PENNSYLVANIA.[3]

State department of health:

COMMISSIONER OF HEALTH.

Samuel G. Dixon, M. D., LL. D., Harrisburg.

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[1] The State board of health consists of five persons (one of whom is a sanitary engineer) appointed by the governor, and four members of the medical society of the State of North Carolina chosen by the medical society by ballot. The board of health elects a secretary-treasurer, who is known as the State health officer.

[2] The law provides for a State board of health in charge of one commissioner, known as the State commissioner of health, who is appointed by the governor.

[3] The law provides for a department of health, consisting of a commissioner of health and an advisory board.

State department of health—Continued.

ADVISORY BOARD

Adolph Koenig, M. D., Pittsburgh.
Lee Masterson, C. E., Johnstown.
Charles B. Penrose, M. D., Philadelphia.
B. H. Warren, M. D., West Chester.
George W. Guthrie, M. D., Wilkes-Barre.

PHILIPPINE ISLANDS.

Director of health and chief quarantine officer:

Victor G. Heiser, passed assistant surgeon, Public Health and Marine-Hospital Service.

Assistant director of health:

Carroll Fox, passed assistant surgeon, Public Health and Marine-Hospital Service.

PORTO RICO.

Director of health, charities, and corrections:

Manuel Camuñas, San Juan.

Director of sanitation:

William Fontaine Lippitt, M. D., San Juan.

Insular board of health:

Francisco del Valle Atiles, M. D., president.
José Lugovina, M. D., secretary.
Jorge Dominguez.
F. W. Dalrymple.
Manuel Travieso.
Tomás Vazquez, M. D.
José N. Carbonell, M. D.
Gustavo Munoz, M. D.

RHODE ISLAND.

State board of health:

Alexander B. Briggs, M. D., president, Ashaway.
Gardner T. Swarts, M. D., secretary and commissioner of public health, Providence.
William L. Harris, Providence.
Rev. George L. Locke, Bristol.
Rufus E. Darrah, M. D., Newport.
James O'Hare, Ph. C., Providence.
John H. Bennett, M. D., Pawtucket.
R. Morton Smith, M. D., Riverpoint.

SOUTH CAROLINA.[1]

State board of health:

A. W. Jones, comptroller general, Columbia.
J. Fraser Lyon, attorney general, Columbia.
South Carolina Medical Association.

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[1] The State board of health consists of the South Carolina Medical Association, together with the attorney and comptroller general of the State. The above-named medical association every seven years elects seven members to be recommended to the governor for appointment to cooperate with the State officers named to constitute an executive committee having power to act in the intervals between sessions of the State board of health. Upon the recommendation of the executive committee the governor appoints a State health officer, who becomes secretary and executive officer of the State board of health.

Executive committee:

A. W. Jones, comptroller general, Columbia.
J. Fraser Lyon, attorney general, Columbia.
Robert Wilson, jr., M. D., chairman, Charleston.
D. B. Frontis, M. D., Ridge Spring.
C. C. Gambrell, M. D., Abbeville.
E. A. Hines, M. D., Seneca.
W. J. Burdell, M. D., Camden.
William Egleston, M. D., Hartsville.
W. M. Lester, M. D., Columbia.

Secretary and executive officer State board of health:

James A. Hayne, M. D., Columbia.

SOUTH DAKOTA.

State board of health:

O. N. Hoyt, M. D., president, Pierre.
P. B. Jenkins, M. D., vice president, Waubay.
W. L. Vercoe, M. D., superintendent and secretary, Whitewood.
R. T. Dott, M. D., Salem.
H. R. Kenaston, M. D., Bonesteel.

TENNESSEE.

State board of health:

R. E. Fort, M. D., president, Nashville.
A. M. Gamble, M. D., vice president, Maryville.
R. Q. Lillard, M. D., secretary and executive officer, Lebanon.
Louis Leroy, M. D., Memphis.
Hon. T. F. Peck, Nashville.

TEXAS.

State board of health:

Ralph Steiner, M. D., president and State health officer, Austin.
B. F. Calhoun, M. D., Beaumont.
Hugh McLaurin, M. D., Dallas.
K. H. Beall, M. D., Fort Worth.
B. M. Worsham, M. D., El Paso.
A. W. Fly, M. D., Galveston.
S. M. Lister, M. D., Houston.

Secretary State board of health:

R. P. Babcock, Austin.

UTAH.

State board of health:

F. S. Bascom, M. D., president, Salt Lake City.
T. B. Beatty, M. D., secretary and executive officer, Salt Lake City.
W. R. Calderwood, M. D., Salt Lake City.
D. O. Miner, M. D., Nephi.
Fred Stauffer, M. D., Salt Lake City.
A. F. Doremus, C. E., Salt Lake City.
H. K. Merrill, M. D., Logan.

VERMONT.

State board of health:

Charles S. Caverly, M. D., president.
Henry D. Holton, M. D., secretary and executive officer, Brattleboro.
F. Thomas Kidder, M. D., treasurer.

VIRGINIA.

State board of health:

W. M. Smith, M. D., president, Alexandria.
S. W. Hobson, M. D., vice president, Newport News.
J. B. Fisher, M. D., secretary, Midlothian.
J. H. Dunkley, M. D., Saltville.
T. C. Firebaugh, M. D., Harrisonburg.
L. T. Royster, M. D., Norfolk.
Lewis E. Harvie, M. D., Danville.
George Ben Johnston, M. D., Richmond.
Stuart McGuire, M. D., Richmond.
Reid White, M. D., Lexington.
O. C. Wright, M. D., Jarratts.
George B. Lawson, M. D., Roanoke.

Health commissioner and executive officer of the State board of health:

Ennion G. Williams, M. D., Richmond.

WASHINGTON.

State board of health:

Elmer E. Heg, M. D., president, Seattle.
Eugene R. Kelley, State commissioner of health, Seattle.
Prof. E. J. McCausterland, C. E., Seattle.
Edwin L. Kimball, M. D., Spokane.
Wilson Johnston, M. D., Spokane.

WEST VIRGINIA.

State board of health:

R. E. Vickers, M. D., president, Huntington.
H. A. Barbee, M. D., secretary and executive officer, Point Pleasant.
C. W. Halterman, M. D., Clarksburg.
C. A. Wingerter, M. D., Wheeling.
L. S. Brock, M. D., Morgantown.
W. W. Golden, M. D., Elkins.
M. V. Godbey, M. D., Charleston.
J. E. Robins, M. D., Charleston.
A. N. Frame, M. D., Parkersburg.
H. M. Rymer, M. D., Harrisville.

WISCONSIN.

State board of health:

William F. Whyte, M. D., president, Watertown.
C. A. Harper, M. D., secretary and executive officer, Madison.
C. H. Sutherland, M. D., Janesville.
E. S. Hayes, M. D., Eau Clair.
L. E. Spencer, M. D., Wausau.
Hasso A. Meilike, M. D., Clintonville.
Lawrence P. Mayer, M. D., Hudson.

WYOMING.

State board of health:

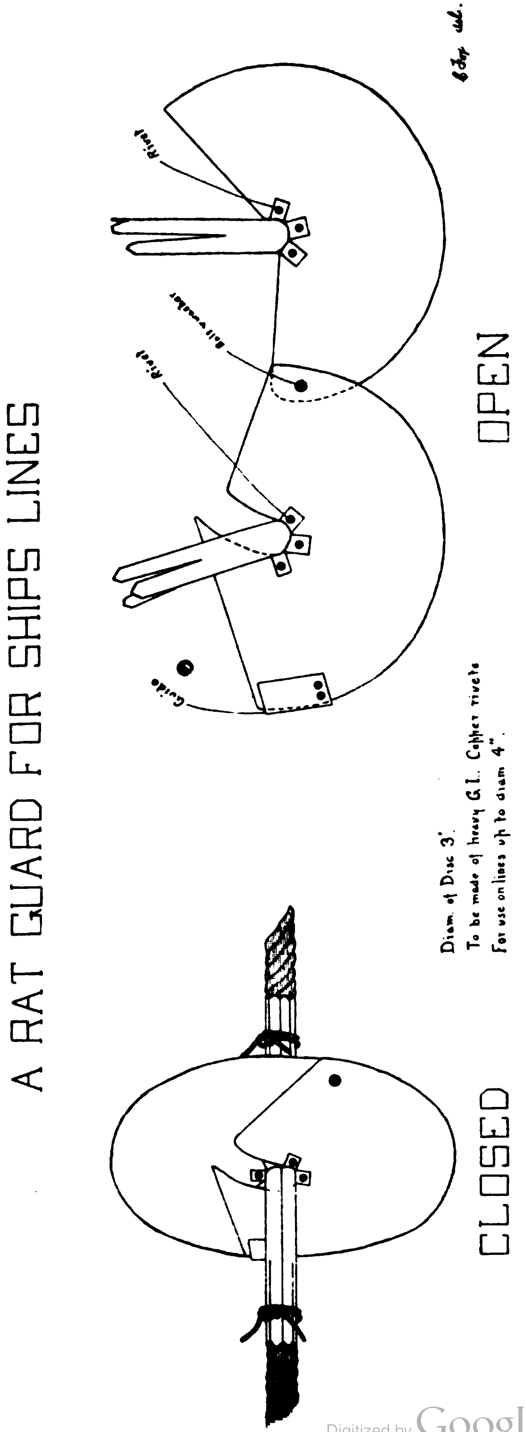
Herbert T. Harris, M. D., president, Basin.
W. A. Wyman, M. D., secretary and executive officer, Cheyenne.
Anna G. Hurd, M. D., Sheridan.

THE RAT GUARD USED IN THE PHILIPPINE ISLANDS.

By Carroll Fox, Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

The question of securing a rat guard that would give efficient service and at the same time meet the other requirements has long been the subject of consideration by the United States quarantine authorities in the Philippine Islands. There has recently been put into use a guard patterned after the combined ideas of several of the officers, which answers all purposes. It is, in the first place, an effective barrier against the passage of rats; then it is cheap, readily applied, light, and not easily made unserviceable by hard usage. It is built on the single disk plan. It has been found that the double disk is cumbersome, though it may be effective, and is readily put out of service by the rough usage which it is bound to receive. The style of rat guard which combines the points of a guard and trap is theoretically all right but practically of little value.

The special features of the guard under consideration are these: A single disk in two parts with arms (funnels) from both sides. It is hinged by bolting at the periphery of the disk. There is a guide permitting a perfect opposition of the two parts of the disk when closed. It is adjustable to many different sizes of rope and when placed


A RAT GUARD FOR SHIPS LINES
OPEN
CLOSED
Rivet
Bolt-washer
Rivet
Guide
Diam. of Disc 3'.
To be made of heavy G.I.. Copper rivets
For use on lines up to diam 4".

on the line fits closely by tying on both sides. Rivets are used throughout, thus increasing the strength. The distal portion of the arms is cut longitudinally into three strips so that they may be bent to come into immediate contact with the rope when tied.

The details of construction as worked out after considerable experience are as follows: Flat sheet galvanized iron is used for all parts of the guard; 20 to 24 gauge answers best, for that weight of iron is strong enough and does not make the guard too heavy. The shield should not be less than 3 feet in diameter. The funnel tubes should be 18 inches long on each side of the shield. The central aperture can be made to fit any size of rope. One made for a 3-inch diameter rope will serve for all smaller sizes. When made or used for encircling a number of lines at the same time the shield should be 4 feet in diameter and the funnel tube enlarged and supported by five flanges and five rivets instead of three. The guide piece, which is the one important feature of this guard, is riveted on one side only and then bent around the circumference. The rivets which fasten the funnel tubes go through the tube flanges on each side of the shield. One bolt, two washers, and five rivets are needed for each guard. When badly damaged by use or carelessness a block of wood and a hammer are all that is required to restore the guard to its former usefulness.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

CHICAGO, ILL.

ROLLER TOWELS—USE OF PROHIBITED IN PUBLIC LAVATORIES.

Sec. 1. That no person, firm, or corporation owning, in charge of, or in control of any public lavatory or washroom shall maintain in or about such lavatory or washroom any towel for common use.

The term "common use" as used in this ordinance shall be construed to mean for use by more than one person.

Sec. 2. Any person, firm, or corporation violating any of the provisions of this ordinance shall be fined not less than $5 nor more than $100 for each offense.

Sec. 3. This ordinance shall be in full force and effect from and after its passage, approval, and due publication.

[Ordinance adopted July 17, 1911.]

EAST PROVIDENCE (TOWN), R. I.

NUISANCES—POISON IVY, DOMESTIC ANIMALS.

Sec. 17. The owner or occupant of any land, within the limits of the town of East Providence, upon which there is any poisonous ivy or any Jamestown or Jimson weed within 50 feet of any highway or street, and if the land be in the compact part of the town, within 2 feet of any boundary line between adjacent owners (unless the adjacent owner shall have consented to the same), shall cause such ivy or weed to be removed within five days after receiving notice so to do from the health officer.

Sec. 18. No horses, hogs, sheep, goats, or cattle shall be allowed to go loose and unfastened through and over the streets and highways of the compact parts of the town unless the same are in charge of a sufficient number of persons to keep said animals from trespassing upon the sidewalks of and the land adjoining and abutting upon said streets and highways, and every such trespass shall constitute an offense for which the owner of said animals and the persons in charge of the same shall be severally responsible.

Sec. 19. Whenever a nuisance shall exist upon or in any building or premises, the health officer shall, except as may be otherwise provided, issue a notice to the owner, lessee, or agent of such building or premises to abate such nuisance within a specified time, and such notice shall be served by any police constable of the town. If such nuisance be not abated within the specified time, the health officer is authorized to abate such nuisance: *Provided*, That the cost of abating any such nuisance shall not exceed the sum of $25. The town treasurer shall pay the expenses of the same, and the owner and lessee of such building or premises shall be severally liable therefor, and the same shall be recoverable from the owner or lessee by an action in the name of the town treasurer, to the use of the town of East Providence, before any court of competent jurisdiction.

[From chap. 4 of an ordinance adopted Aug. 2, 1911.]

OIL CITY, PA.

SECONDHAND CLOTHING AND FURNITURE.

Rule 23. It shall be unlawful to sell or offer for sale secondhand articles of clothing or cloth-covered furniture or any other article of textile nature without first having said article or articles disinfected under the direction of the health officer.

Rule 24. It shall be unlawful to hold or conduct what is known as "rummage sales" without written permission of the board of health.

[Regulations board of health adopted Oct. 18, 1911.]

POMONA, CAL.

PLUMBING, SEWER CONNECTIONS, AND CESSPOOLS.

SEC. 1. Any person, firm, or corporation desiring to do any plumbing work within the city limits shall apply to the plumbing inspector for a permit to do so, and he shall issue a permit for the proposed work to be done in accordance with the rules and regulations hereinafter set forth and provided for.

SEC. 2. The duties of the plumbing inspector shall be to enforce the provisions of this ordinance and generally to do and perform such duties as the city council shall by ordinance or otherwise direct.

SEC. 3. In cases where a building permit is necessary, the plumbing permit will not be issued until after the building permit has been issued.

SEC. 4. It will not be necessary to obtain a plumbing permit in cases of the following repairs: Leaks in drains, soil, waste, or vent pipes, but should any trap, drain, or soil pipe, be or become bad or defective and it is necessary to remove and replace with sound material in any part or parts, a permit must be procured and inspection made as herewith provided.

SEC. 5. The plumbing inspector shall charge and collect for plumbing permits at the following rate, to wit: For all work costing $25 or less, $0.50; from $25 to $150, $1; for work costing $150 and less than $300, $2; each additional $100 or fraction thereof, $0.25.

A charge of $1 will be made by said plumbing inspector for every extra visit necessarily made by him in the performance of his duties. No charge will be made for the first inspection of rough work or the first inspection of finished work, and no other permit will be issued to said plumbing contractor or owner until the above-mentioned charge is paid into the office of the plumbing inspector.

The inspector of plumbing and sewers shall keep a record of all permits granted and work inspected by him, and shall report to the city council whenever requested to do so.

SEC. 6. All work for which a permit is necessary shall be subject to inspection, and notice must be given to the plumbing inspector by the owner or contractor doing said work or having the same done as soon as said work is ready for inspection. Notice shall be given to inspect both the rough and finished work, and the contractor shall secure a final certificate from the plumbing inspector and deliver the same to the owner or agent.

All work must be left uncovered and convenient for examination until inspected and approved by the said plumbing inspector. Such inspection shall be within 24 hours of said notification being received at the office of said plumbing inspector. The inspecting officer may apply the water, peppermint, or smoke test; and all necessary tools, labor, and assistance for the said tests shall be furnished by the person or persons assuming control of the work, and such person or persons shall remove or repair any defective material or work when so ordered by the inspecting officer.

SEC. 7. Any soil pipe, drain pipe, trap, water-closet, urinal, sink, or other fixture set up or fitting or fittings laid, used, or constructed otherwise than in accordance with these regulations, or which shall, in the opinion of the plumbing inspector, be or become of bad or defective quality, shall upon notice, either verbal or in writing, from said inspector, be removed or repaired in the manner determined and within the time fixed by the inspecting officer, and it shall be unlawful for any person or persons to occupy or to make use of any house or buildings where plumbing work has been constructed unless the owner, agent, or lessee of the said building shall have first procured a final certificate of acceptance from the plumbing inspector.

SEC. 8. Every house or building, in or for which any house drainage or plumbing arrangements are constructed, shall be separately and independently connected with an accepted city sewer, when such sewer is constructed upon the street or alley upon which the property abuts; provided that in case it is impracticable or burdensome to connect each house separately, the plumbing inspector shall designate the manner of connection in conformity with necessary sanitary precautions, and in case there is no sewer constructed on such street or alley, said house or building may be connected with an approved cesspool constructed to the satisfaction of the plumbing inspector. Cesspool to be not less than 4 feet and not more than 6 feet in diameter, and the walls carried plumb to the bottom. Said cesspool shall be of sufficient depth to reach gravel and not less than 12 feet deep, and walled up from the bottom with good brick spaced not more than 2 inches apart up to within 4 feet of surface of ground and arched over with brick laid in cement mortar. Top to be at least 18 inches below the surface of the surrounding ground. Said cesspool must not be located at a less distance than 5 feet away from any property line, or less than 10 feet away from any dwelling, without special permission to do so from the plumbing inspector.

Sec. 9. When a building is on the rear of a lot, on the front of which is another building, the plumbing work of the building in the rear may be connected with the plumbing work of the building in the front.

Sec. 10. It shall be unlawful for any person or persons to use or occupy any house or building, in the city of Pomona, in or for which any house drainage or plumbing arrangements are constructed, unless such house drainage or plumbing arrangements are connected with an accepted city sewer, when such sewer is constructed on the street or alley on which the property abuts, or connected to an approved cesspool.

Sec. 11. All soil or waste pipes below the ground to a point of 2 feet outside of the exterior wall of a building shall be cast iron of not less than 2 inches internal diameter, except in case of water-closet, which shall not be less than 4 inches internal diameter and which shall be carried undiminished in size up to the highest point of the roof or fire walls of all new buildings, and in old buildings to a point satisfactory to the plumbing inspector, and shall not terminate within 8 feet of any window, air shaft, or opening of any house or building, and the same shall be further moved if the plumbing inspector considers necessary.

Sec. 12. All drains, outside of the building and to the property line, or cesspool shall be first grade vitrified iron stone pipe, cast iron, or bituminized fiber pipe, and shall have an internal diameter not less than 4 inches. Stoneware or bituminized fiber pipe shall not be allowed within 2 feet of the exterior wall of any building; neither shall any vitrified pipe come within 12 inches of the surface of the ground throughout its entire course. The joining of each and every section of vitrified piping must be completely and uniformly filled with the best Portland cement, two parts of cement and one part sand, and every joint thoroughly cleaned from the inside, so as not to form an obstruction. The different sections must be laid in perfect line on the bottom and sides with a fall of not less than one-quarter of an inch per foot toward the property line or cesspool. This piping must be made perfectly water-tight; it shall not be covered nor concealed in any way until it has been properly tested and approved by the plumbing inspector. All changes in direction shall be made with curves or Y branches and all connections with Y branches and one-eighth bends.

Sec. 13. Every water-closet, sink, slop hopper, bath tub, and each tray, or set of wash trays or other fixtures connected with the drain pipe directly or indirectly, must be separately, independently, and effectively trapped and vented; the vent must be as near the trap as possible, and in no case farther away than 2 feet. The trap must be placed as near the fixtures as possible and in no case farther than 2 feet from the fixtures. In no case shall any fixture waste be intersected in closet bend. Sinks in all butcher shops, restaurants, and public laundries shall have a suitable grease trap.

All wash racks or floor drains where vehicles of any kind are washed or cleaned must have suitable sand box for intercepting mud. The waste pipe from same must be not less than 4-inch pipe, but may be vented with 2-inch pipe. Water seal must be at least 3½ inches deep and bottom of water seal must be at least 5 inches from bottom of sand box. A clean-out screw must be placed in the end of the pipe in sand box. When waste line crosses a partition or location where vent can raise above floor line, vent connection may be not to exceed 7 feet from center line of sand box. If distance is more than 7 feet, vent must be within 2 feet of sand box.

No wooden wash trays shall be maintained, constructed, or used inside of any building or porch. All wash trays in any building shall be of nonabsorbent material. Drum traps may be used only in bath-tub connections.

No solder unions or slip-joint nuts of any description shall be used on the sewer side of the trap.

Sec. 14. All traps to fixtures shall be separately and effectively vented, and all special air pipes within a radius of 12 feet should, if practicable, converge into one pipe. The size of the same shall be governed by provisions of section 11 of regulations, and to extend up to and following the underside of the roof and be brought to the air within 18 inches of the highest point of the roof, or conducted into the main stack; provided that in all outbuildings all vent pipes shall extend at least 15 feet above the ground, except in old buildings, which may be done as the plumbing inspector directs.

Sec. 15. No brick, sheet metal, earthenware pipe, or chimney flue shall be used as a sewer ventilator or to ventilate any trap, drain, soil, or waste pipes. Cellar drains shall not be connected with any soil or waste pipes, except by special permission of the plumbing inspector.

Sec. 16. The plumbing inspector, in accepting work of any and all persons carrying on, conducting, and assuming control of, constructing or causing to be constructed any plumbing or house drainage affecting the sanitary conditions of any house or building of said city, shall be governed by the following regulations, and it shall be unlawful for any person to fail, neglect, or refuse to comply with the same upon notice to do so:

(1) *Closets.*—No water-closet shall be put into or upon any property, house, or building except those flushed by a tank containing not less than 5 gallons of water, or water-closets flushed by a flushometer valve. Plunger closets, Philadelphia hoppers, pan closets, or any other closets where the supply to the bowl is direct from the street service or building supply, are prohibited in all cases, and where such exists shall be removed and replaced with tank closets.

(2) *Top fixture.*—A fixture that is a top fixture on a vertical stack and not more than 2 feet from the inlet to the stack need not have its traps revented, provided it does not discharge into the stack below the level of its seal, except water-closets and pedestal slop hoppers whose traps are in the bowl. All other traps shall be set true to their water seals.

(3) *Weight of cast-iron pipe.*—No cast-iron soil pipes or fittings, either waste or vent, shall be used in any plumbing work that is of less weight per length of 5 feet than is shown in the following table for the respective sizes of pipe, to wit:

	Pounds.		Pounds.
2-inch pipe	17½	6-inch pipe	52½
3-inch pipe	22½	8-inch pipe	90½
4-inch pipe	32½	10-inch pipe	125
5-inch pipe	42½	12-inch pipe	150

(4) *Two fixtures in one trap prohibited.*—No fixture shall be trapped by having its outlet connected with the trap of another fixture.

(5) *Waste pipes.*—Every soil or waste pipe under or inside of any building shall be of cast iron, lead, brass, or galvanized iron. (Galvanized-iron pipe and fittings known as the Durham system are permissible, provided that there shall not be employed or used anything in the system that is in violation of this ordinance.)

(6) *Tests.*—Before the fixtures are placed in connection with the plumbing of any house or building, or any portion of the drainage system is covered or concealed from view, the outlet of the soil pipe and all openings into it below the top shall be hermetically sealed; the pipe shall then be filled with water to the highest point in the system. Defective pipes and fittings of their different kinds must be removed and replaced by sound material; cement work of any description is prohibited and every part of the work shall conform to these rules and regulations and shall be subject to the approval of the plumbing inspector.

(7) *Joints in iron.*—All joints in cast-iron soil pipes, whether inside of the building or otherwise, shall be made with pig lead and oakum and thoroughly calked.

(8) *Vents.*—All vent pipes and their fittings shall be of galvanized-iron screw pipe or cast-iron pipe.

(9) *Stacks.*—All vertical stacks or soil and waste pipes shall be provided with a brass trap screw ferrule at the foot and also in other places where the inspecting officer may think it necessary. Trap screw ferrules shall be of the same diameter as the waste stack or lateral run. All changes of direction of soil or waste pipes shall be made with full Y branches and one-eighth bends; sanitary tees shall not be used except in perpendicular stacks. All clean outs shall be extended to outside of walls or some convenient point, easy of access, satisfactory to the plumbing inspector. Four-inch double sanitary tees, or 2-inch double sanitary tees, shall not be used in any waste pipe.

(10) *Wiped joints.*—All connecting between lead piping, or lead pipe and brass pipe or fitting, shall be joined by wiped joints. Connections between soil pipes and lead shall be made with brass ferrules or brass solder nipples, and their joining shall be wiped. Bolted or copper bit, cup, or flush soldered joints are prohibited in all cases.

(11) *Waste pipes—size of vents.*—Waste pipes in all cases shall be of lead, galvanized iron, or cast iron of the following sizes:

All screw waste pipes shall be reamed to the full size of pipe.

Waste pipe for bathtubs, washbasins, laundry trays, each not less than 2 inches on all horizontal runs of 8 feet or more in length, and 1½ inches in all other runs of 45° or more, and on all horizontal runs, less than 8 feet in length. The waste slop hoppers, urinals, and sinks shall not be less than 2 inches in any case. In installing batteries of basins the outlet from any bowl shall not be more than 2 feet from the trap. The size of waste pipes from bath tubs and lavatories shall be for more than one, and not to exceed eight, 2 inches; for more than eight and not to exceed fourteen, 2½ inches; for more than fourteen, 4 inches.

For sinks, urinals, slop hoppers for more than two and not to exceed six, 2½ inches; for more than six, 4 inches.

(12) *Size of vents.*—All traps and vents shall be the same size as the waste, except sinks, urinals, and small slop hoppers, which may be 1¼ inches. For more than one and not exceeding two fixtures, 1½ inches; for more than two and not exceeding eight, 2 inches; for more than eight and not exceeding twelve, 2½ inches; for more than twelve and not exceeding twenty, 3 inches.

(13) *Size of closet vents.*—Vent pipes from water closets shall be not less than 2-inch pipe and not less than 6 inches above the highest fixture in the system. Water closets, where more than one water closet is vented through the same pipe, the size shall be as follows:

For more than one and not to exceed four closets, 2 inches; for more than four and not to exceed eight, 2½ inches; for more than eight and not to exceed fourteen, 3 inches for more than fourteen, 4 inches.

Any vent pipe running in a horizontal direction shall not exceed 15 feet in length and shall have a fall of not less than one-quarter inch per foot.

(14) *Vents.*—The vents of water closets are allowed a horizontal run of 2 feet to catch the nearest partition. The vents from all other fixtures, except slop hoppers, which have a vent horn attached to the trap itself, must be of the class known as continuous and shall rise 6 inches above the fixture to prevent backwater from entering the fixture.

(15) No privy vault, cesspool, exhaust from engine, or blow-off from boiler shall be connected with a house drain or sewer.

(16) *Refrigerators.*—The drip or waste pipe from refrigerators shall not connect directly with the soil or waste pipes or with the sewer, but must extend to the open air or to a water-supplied sink. Every safe, waste from basin, bath, sink, water-closet, or other fixture shall not connect with any soil pipe, waste pipe, or sewer, but shall discharge into a water-supplied sink or outside of building, except in case of urinal, which shall be trapped and vented.

(17) *Screens.*—All openings into house connections where water is admitted, except through water closets, must be protected by screens with meshes not to exceed one-half inch.

(18) *Removals.*—Every water-closet, sink, bathtub, basin, or other fixture, maintained with any house or building that is of bad and defective quality, and is removed and replaced with other fixtures of their respective class, shall have their traps vented in accordance with this ordinance.

Sec. 17. No privy, vault, or cesspool shall be maintained or allowed in any part of the city where a sewer exists in the street or alley upon which the property abuts.

Sec. 18. All plumbing or house-drainage work done to replace any that may be condemned by the health officer or plumbing inspector shall be considered as new work and constructed in conformity with the requirements of this ordinance; and no person or persons shall connect or cause to be connected any plumbing or house-drainage work with any public sewer or cesspool, unless the said plumbing or house-drainage work conforms to the requirements of this ordinance.

Sec. 19. When anything is prohibited in this ordinance, not only the person actually doing the prohibited thing, but also the other persons actively concerned therein, shall be liable upon conviction to the penalty prescribed.

Sec. 20. Upon removal or alteration of any building, or the making of any addition thereto, if new plumbing fixtures are placed in such building, either in the original or altered or added part thereof, such new fixtures must be properly connected with and attached to the fixtures in the original parts of said building; and if the fixtures are to be reset, either in the old or new part of such building, then both such original or additional fixtures and any altered plumbing whatever must comply in all respects with the rules and regulations prescribed in this ordinance.

The use of common black or dipped pipe as waste or vent pipes is prohibited.

The use of trap threads is prohibited, except with NP traps.

Double hub fittings are not allowed in soil or waste lines.

Sheet-lead flushings are required on all work and shall extend at least 6 inches above the roof.

Soil, waste, and vent lines shall be properly strapped and piers placed before the test is made.

Gas water heaters must be vented to the open air or enter chimney below ceiling, and are not allowed in an inclosed closet.

The use of fresh-air inlets between cesspool and house or between the city sewer and the house is prohibited.

Sec. 21. In order to prevent waste water entering vent pipe, every branch or branch fitting for a vent pipe shall when leaving a horizontal or vertical line of waste pipe be taken from a Y branch lying in the direction from which the waste water flows in such waste pipe, thus forming an angle of 45° with the waste pipe.

Sec. 22. It shall be unlawful for any person, firm, or corporation to use or occupy, or lease or let to be used or occupied, any building or part thereof to be used as a factory, laundry, tenement, or lodging house or place in or where human beings reside or work, unless such building is provided with at least one water-closet for every 15 occupants, workers, employees, or residents in such building.

Sec. 23. No person or corporation shall commence to lay pipes for any purpose in any street, avenue, or alley of said city in which sewers are laid unless such person or corporation shall have given 24 hours' previous notice thereof to the inspector of plumbing and sewers; and the manner of excavating and the back filling over the pipe laid shall be subject to the direction and approval of such inspector. All such work shall be so done as to avoid injury to any sewer or drain.

Sec. 24. It shall be unlawful to injure, break, or remove any portion of any manhole, lamp pole, flush tank, or any part of the public sewers of said city, or to throw or deposit or cause to be thrown or deposited in any opening of such sewers, or any receptacle connected with such sewers, or to place, or to suffer or to cause to be placed, in any house connection, or in any private drain connecting with such public sewers any garbage, offal, dead animals, vegetables, parings, ashes, cinders, rags, or any bulky substance having a tendency to obstruct the free flow of said sewers, or in anywise to damage the same, and the inspector of plumbing and sewers shall have power to prevent the discharging into the public sewers any private sewer or drain through which substances are discharged liable to injure the public sewers or obstruct the flow of sewage.

Sec. 25. No cesspool shall be constructed upon any lot adjacent to a sewer line, or within any sewer district in the city of Pomona; and all plumbing in this city shall conform to this ordinance.

Sec. 26. The inspector of plumbing and sewers shall keep a record of all permits granted and work inspected by him, and shall report to the council whenever requested to do so.

Sec. 27. All licensed plumbers shall give a bond to the city of Pomona in the sum of $500 for the faithful observance of all the provisions of this ordinance; which bond shall be filed with the city clerk after approval by the mayor of said city. And no plumber or other contractor shall do any plumbing or sewer work without first giving said bond, and when from any cause any such bond shall become insufficient in the opinion of said council said council may at any regular or special meeting thereof order a sufficient bond to be given.

Sec. 28. Any person, firm, or corporation who shall violate or neglect or refuse to comply with the provisions of this ordinance shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine of not less than $5 and not more than $100, or by imprisonment of not less than 5 days and not more than 50 days, or by both such fine and imprisonment.

Sec. 29. Ordinance No. 219 and all other ordinances or parts of ordinances in conflict herewith are hereby repealed.

Sec. 30. The city clerk shall certify to the passage of this ordinance and shall cause the same to be published once in the Pomona Daily Review, and 30 days thereafter it shall take effect and be in force.

Approved this 31st day of October, 1911.

[Ordinance No. 356, repealing ordinance No. 219 and all other ordinances inconsistent therewith, adopted Oct. 31, 1911.]

REPORTS TO THE SURGEON GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PLAGUE-PREVENTION WORK.

PLAGUE-INFECTED SQUIRRELS FOUND.

During the week ended April 27, 1912, positive diagnosis of plague was made in 18 ground squirrels collected in Alameda County, Cal. The squirrels were found as follows: April 13, 1 squirrel; April 15, 4 squirrels; April 16, 3 squirrels; April 17, 3 squirrels; April 18, 3 squirrels; April 20, 4 squirrels.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 9,198 acres of land in Alameda County were covered with poison during the week ended April 27, 1912.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Apr. 20, 1912	153 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Apr. 27, 1912	4	[1] 224	186	
Oakland	do	33	[2] 796	598	
San Francisco	do	6	[3] 1,871	1,402	
Washington:					
City—					
Seattle	do		915	890	

[1] Mus norvegicus, 190; Mus musculus, 34.

[2] Mus norvegicus, 630; Mus musculus, 165; Mus rattus, 1.

[3] Mus norvegicus, 922; Mus musculus, 465; Mus rattus, 257; Mus alexandrinus, 227. (Identified.)

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended April 27, 1912, 720 ground squirrels collected in Alameda County, Cal., were examined for plague infection. Eighteen were found to be plague infected.

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 18, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	2	1	La Crosse, Wis	1	
Carbondale, Pa	1	1	Nashville, Tenn	2	1
Chicago, Ill	1	8	New Orleans, La	1	1
Cincinnati, Ohio	1	3	Newport, Ky		1
Cleveland, Ohio		1	New York, N. Y	8	3
Columbus, Ohio	1	1	Omaha, Nebr	1	2
El Paso, Tex	2		St. Louis, Mo	1	3
Haverhill, Mass	3		San Antonio, Tex	1	2
Johnstown, Pa	1		San Francisco, Cal		1
Kansas City, Kans	7		Washington, D. C	1	1
Kansas City, Mo	3	7	Worcester, Mass		1

LOUISIANA, JAN. 1 TO MAY 12, 1912.

The following statement of cerebrospinal meningitis in Louisiana was taken from the Quarterly Bulletin of the State Board of Health, issued May 1, 1912:

Jan. 1 to May 12, 1912.

Parish.	Cases.	Parish.	Cases.
Avoyelles	2	Orleans	44
Bienville	6	Ouachita	2
Caddo	141	Rapides	1
Calcasieu	8	Richland	1
Caldwell	1	Sabine	2
De Soto	8	St. Mary	1
East Baton Rouge	4	Tangipahoa	1
Jefferson	2	Vernon	11
Lafayette	1	Webster	1
Lincoln	2	Winn	1
Madison	2		
Morehouse	5	Total	250
Natchitoches	1		

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 18, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Altoona, Pa	1	1	Niagara Falls, N. Y	1	
Boston, Mass		3	Oklahoma, Okla	1	1
Cincinnati, Ohio	1	1	Passaic, N. J	1	
Cleveland, Ohio	6	1	Philadelphia, Pa	7	
Harrisburg, Pa	1		Saginaw, Mich		1
Hartford, Conn	2		St. Louis, Mo	10	2
Jersey City, N. J		1	San Francisco, Cal	6	
Los Angeles, Cal	1		Toledo, Ohio		1
New York, N. Y	28	8	Williamsport, Pa	1	1

PELLAGRA.

During the week ended May 18, 1912, 2 cases of pellagra were reported at Hoboken, N. J., 1 death at Columbus, Ga., and 1 death at Lynchburg, Va.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 18, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Altoona, Pa		2	Marinette, Wis	1	
Aurora, Ill		2	Medford, Mass		1
Baltimore, Md		14	Melrose, Mass		2
Binghamton, N. Y	4	2	Montgomery, Ala		1
Boston, Mass		31	Nashville, Tenn		3
Braddock, Pa	1	3	Newark, N. J		11
Bridgeport, Conn		4	New Bedford, Mass		4
Brockton, Mass		1	Newburyport, Mass		2
Cambridge, Mass		4	New Orleans, La		4
Chelsea, Mass		3	Newton, Mass		1
Chicago, Ill	35	112	New York, N. Y		137
Chicopee, Mass		4	Oakland, Cal		6
Cincinnati, Ohio		8	Omaha, Nebr		5
Cleveland, Ohio	22	6	Passaic, N. J		1
Clinton, Mass		1	Pawtucket, R. I		3
Danville, Ill		2	Philadelphia, Pa	25	33
Dayton, Ohio		3	Pottstown, Pa		1
Elmira, N.Y		2	Providence, R. I		3
El Paso, Tex		1	Reading, Pa	1	2
Erie, Pa		1	Richmond, Va		1
Evansville, Ind		3	Rockford, Ill		1
Everett, Mass		1	Salem, Mass		1
Fall River, Mass		5	San Antonio, Tex		2
Fort Wayne, Ind		3	San Francisco, Cal	7	
Grand Rapids, Mich		1	Schenectady, N. Y	3	
Harrisburg, Pa	3		Seattle, Wash		2
Hartford, Conn		1	Spokane, Wash		3
Houston, Tex		1	Springfield, Mass		4
Kalamazoo, Mich	1	1	Toledo, Ohio		2
Kansas City, Kans	2	5	Washington, D. C		9
Lancaster, Pa	3		Wilkes-Barre, Pa		3
Lexington, Ky		4	Wilkinsburg, Pa	2	1
Los Angeles, Cal	2	5	Williamsport, Pa	1	2
Lowell, Mass		3	Wilmington, Del		3
Lynn, Mass		4	Yonkers, N. Y		1
Malden, Mass		1	York, Pa	1	
Manchester, N. H	4	4			

POLIOMYELITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 18, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	1		Philadelphia, Pa	1	
Camden, S. C	1		Seattle, Wash		1
Chicago, Ill	1	1	Springfield, Mass	2	1
Lowell, Mass	1	1	Toledo, Ohio		1
New York, N. Y	1				

RABIES.

During the week ended May 18, 1912, 1 death from rabies was reported at Chicago, Ill.

SAN FRANCISCO, CAL.

A Correction.

The 13 cases of rabies reported in the Public Health Reports of May 10, 1912, page 711, as having occurred at San Francisco, Cal., during the week ended April 20, 1912, should have been omitted. The cases referred to were in dogs and not in man.

TETANUS.

During the week ended May 18, 1912, 1 case of tetanus was reported at Saratoga Springs, N. Y.

During the month of March, 1912, 2 deaths from tetanus were reported in the State of Iowa.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED JUNE 7, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Arizona	Apr. 1-30			No case.
Florida:				
Counties—				
Brevard	Apr. 23-29	3		
Escambia	do	3		
Hillsboro	Apr. 1-30	13		
Jackson	do	59		
Nassau	Apr. 23-29	1		
Sumter	do	1		
Volusia	do	2		
Total for State		82		
Duval	May 1-7	11		
Escambia	do	9		
Franklin	do	3		
Madison	do	1		
Orange	do	4		
Putnam	do	1		
Total for State		29		
Volusia	May 12-26	2	1	
Minnesota	Feb. 1-29		2	Cases, p. 460.
County—				
Ramsey	do		1	
Total for State			3	
Pennsylvania	Apr. 1-30	51		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended June 7, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Utah:				
Counties—				
Beaver	Apr. 1-30	10		
Cache	do	26		
Davis	do	23		
Emery	do	15		
Juab	do	1		
Salt Lake	do	103		
Sanpete	do	2		
Tooele	do	6		
Utah	do	25		
Wasatch	do	9		
Weber	do	47		
Total for State		267		
Grand total for the United States		431	4	

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAY 18, 1912.

Cities.	Population, United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	165	9	....	15	....	16	....	....	....	42	25	4	1
Boston, Mass	670,585	216	24	....	162	3	20	2	1	....	80	20	8	....
Chicago, Ill	2,185,283	649	93	10	281	2	270	16	2	1	78	69	9	1
Cleveland, Ohio	560,663	148	28	2	122	....	27	4	....	....	42	23	3	1
New York, N. Y	4,766,883	1,463	270	24	1,713	42	304	15	....	....	512	178	30	5
Philadelphia, Pa	1,549,008	435	64	7	39	1	65	4	....	....	79	46	24	3
St. Louis, Mo	687,029	233	15	....	44	....	27	....	1	....	29	25	6	3
Cities having from 300,000 to 500,000 inhabitants.														
Cincinnati, Ohio	364,463	114	9	....	21	....	17	1	1	....	35	17	9	1
Detroit, Mich	465,766	168	15	3	....	....	37	....	3	....	....	....	....	....
Los Angeles, Cal	319,198	101	12	....	10	....	10	....	....	....	28	21	2	....
Milwaukee, Wis	373,857	97	11	2	146	2	20	1	....	....	19	5	15	....
Newark, N. J	347,469	118	14	2	41	2	21	....	....	....	44	14	2	....
New Orleans, La	339,075	119	1	....	14	....	6	2	1	....	44	14	5	1
San Francisco, Cal	416,912	121	2	....	21	....	2	....	1	....	26	17	5	2
Washington, D. C	331,069	114	2	1	98	....	3	....	....	....	24	14	6	1
Cities having from 200,000 to 300,000 inhabitants.														
Jersey City, N. J	267,779	74	....	....	....	....	....	2	....	....	....	7	....	....
Kansas City, Mo	248,381	18	3	....	8	....	....	1	....	....	2	5	2	....
Providence, R. I	224,326	48	18	2	15	1	22	3	....	....	1	6	1	....
Seattle Wash	237,194	40	2	....	21	....	4	....	....	....	6	8	5	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	28	3	1	2	....	5	....	....	....	2	3	6	2
Cambridge, Mass	104,839	23	4	....	41	....	3	....	....	....	2	3	....	....
Columbus, Ohio	181,548	47	2	....	55	....	11	....	....	....	10	2	1	1
Dayton, Ohio	116,577	42	....	....	60	....	1	1	1	....	1	1	1	1
Fall River, Mass	119,295	36	2	....	2	....	4	....	....	....	1	5	2	1
Grand Rapids, Mich	112,571	34	1	....	4	....	....	....	....	....	....	3	5	1
Lowell, Mass	106,294	37	1	....	71	4	3	....	1	....	5	5	....	....
Nashville, Tenn	110,364	37	2	....	....	....	....	....	....	....	3	7	....	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended May 18, 1912—Continued.

Cities.	Population, United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 100,000 to 200,000 inhabitants—Con.														
Oakland, Cal	150,174	46			10		2		1		2	4	3	
Omaha, Nebr	124,096	28	3	1	1		1					2	7	2
Richmond, Va	127,628	44	1		45		1		2		6	3	1	1
Spokane, Wash	104,402		3		41		4		7				1	
Toledo, Ohio	168,497	54	2		83	2	5					8	4	
Worcester, Mass	145,986	45	7		19	1	5				6	3		
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	14	1								1			
Bayonne, N. J	55,545	11	1		12		6					1		
Brockton, Mass	56,878	11			31		4				4	2		
Camden, N. J	94,538	16	1				3				6		1	
Erie, Pa	66,525	23	4		37	2	4				1	2	1	
Evansville, Ind	69,647	15			2						1		2	
Fort Wayne, Ind	63,933	18	2		15		1					1		
Harrisburg, Pa	64,186	22	5	1	30		1				8			
Hartford, Conn	98,915	26	9		60		4				8	1		
Hoboken, N. J	70,324	8	2		2						2			
Houston, Tex	78,800	40										6		1
Johnstown, Pa	55,482	17	1		6		1		1			1	1	
Kansas City, Kans	82,331		1		4		2		1		1		1	
Lynn, Mass	89,336	27	4	1	9		3	1			7	1		
Manchester, N. H	70,063	26			13		1				1	1	1	1
New Bedford, Mass	96,652	34	1		5		5				12	2	1	
Oklahoma City, Okla	64,205	9									2	2	2	
Passaic, N. J	54,773	13			26		1				1			
Pawtucket, R. I	51,622	5										2		
Reading, Pa	96,071	21			22	2	2				8	2	2	
Saginaw, Mich	50,510	11	4		1		2				2	2		
San Antonio, Tex	96,614	60			1				1			4	3	
Schenectady, N. Y	72,826	16	2		60		4				1	1	1	
South Bend, Ind	53,684	12					3					1		1
Springfield, Ill	51,678	11					1		1					
Springfield, Mass	88,926	40	1	1	5		6				4	6		
Trenton, N. J	96,815	29	1		1		4				14	5		1
Wilkes-Barre, Pa	67,105	18	3		6						7			
Wilmington, Del	87,411	29		1								3		
Yonkers, N. Y	79,803	19	5		4		10				8	1		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150				1								1	
Aurora, Ill	29,807	10					1					1		
Berkeley, Cal	40,434	6	2		29		1				2	1		
Binghamton, N. Y	48,443	25	1								2	1	2	
Brookline, Mass	27,792	10			28		1					2		
Chelsea, Mass	32,452	15			45						7	2	1	
Chicopee, Mass	25,401	11			3						1	1		
Danville, Ill	27,871	11			1							4		
Elmira, N. Y	37,176	15			38						25	2		
El Paso, Tex	39,279	31					5	1	2			6		
Everett, Mass	33,484	7	1		8		2				1			
Fitchburg, Mass	37,826	8			1									
Haverhill, Mass	44,115	13			11		4				3		1	
Kalamazoo, Mich	39,437	12			1		1				1	1		
Knoxville, Tenn	36,346	6			4				6					
La Crosse, Wis	30,417	12	1											
Lancaster, Pa	47,227		2		37						1		1	
Lexington, Ky	35,099	14			4						4	2		
Lynchburg, Va	29,494	9			33		1							
Malden, Mass	44,404	12			9		1				3	1		
Montgomery, Ala	38,136	22										3		
Newcastle, Pa	36,280		3				1						3	
Newport, Ky	30,309	5					1							
Newton, Mass	39,806	7	2		48							1		

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended May 18, 1912—Continued.

Cities.	Population, United States Census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 25,000 to 50,000 inhabitants—Con.														
Niagara Falls, N. Y	30,445	7	3		2						2	1	4	
Norristown, Pa	27,875	8			2		1							
Orange, N. J	29,630	6	1		4							1		
Pasadena, Cal	30,291	7	1								4	2		
Pittsfield, Mass	32,121	16	3	1	1						3	2		1
Portsmouth, Va	33,190	8					1		14			1		
Racine, Wis	38,002	14	5				1							
Roanoke, Va	34,874	12	1		7		1				4	4		
Rockford, Ill	45,401	10					8						5	
Salem, Mass	43,697	18			3		1		3		2		1	
South Omaha, Nebr	26,259	15												1
Superior, Wis	40,384	12										1		
Taunton, Mass	34,259	12			4							2		
Waltham, Mass	27,834	5			29						2			
West Hoboken, N. J	35,403	9			6		3					1		
Williamsport, Pa	31,860	12			55		1					1	1	
Wilmington, N. C	25,748	15			4		1				2		2	
York, Pa	44,750				7		2				7		1	
Zanesville, Ohio	28,026	10										1		
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	1			22									
Ann Arbor, Mich	14,817	14					1				1	3		
Beaver Falls, Pa	17,070	0					1						2	
Biddeford, Me	17,079	20										2		
Braddock, Pa	17,759	7												
Cambridge, Ohio	11,327	2			1									
Camden, S. C		1												
Carbondale, Pa	17,040	5	1	1	20		2							
Clinton, Mass	13,075	3									2		1	
Coffeyville, Kans	12,687										1		1	
Columbus, Ga	20,554	6				1								
Columbus, Ind		1					1							
Concord, N. H	21,497	8			8		1							
Cumberland, Md	21,839	3			52									
Dunkirk, N. Y		3					1				1			1
Galesburg, Ill	20,089	7	1								1	1		
Harrison, N. J	14,498	3									4			
Kearny, N. J	18,659	8			11		1				1			
La Fayette, Ind	20,081	5												
Logansport, Ind	19,050	6					1						1	1
Marinette, Wis	14,610	3												
Marlboro, Mass	14,577	4			1									
Massillon, Ohio		5										1		
Medford, Mass	23,156	5	1		32		1							
Melrose, Mass	15,715	4			27								1	
Moline, Ill	24,199	4	1											
Montclair, N. J	21,150	5			9						1			
Morristown, N. J	12,507	3			3									
Nanticoke, Pa	18,509	3			1									
Newburyport, Mass	19,240	4	1				1				1		1	
North Adams, Mass	22,012	9			3							2		
Northampton, Mass	19,431		1		7						4			
Ottumwa, Iowa	22,012	7					1							
Plainfield, N. J	22,050	5					1				2			
Pottstown, Pa		3	1		5									
Saratoga Springs, N. Y		5									3			
Steelton, Pa	14,246	3	2		8						1			
South Bethlehem, Pa	19,973	9	2	1	7						4			
Warren, Pa	11,080	3			5								1	
Wilkinsburg, Pa	18,294	7			1						1	1		
Woburn, Mass	15,308	2			6								1	

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

FLORIDA.—Reports received from the State board of health show as follows: Week ended April 29, 1912. Diphtheria was reported present at 2 places with 4 cases; malaria at 5 places with 53 cases; tuberculosis at 6 places with 14 cases; typhoid fever at 5 places with 7 cases.

Smallpox.—During the month of April, 1912, smallpox was reported in 7 counties with 82 cases.

Week ended May 6, 1912. Diphtheria present at 1 place (West Palm Beach) with 1 case; malaria at 5 places with 38 cases; smallpox 29 cases in 6 counties; tuberculosis at 8 places with 9 cases; typhoid fever at 2 places with 3 cases.

Week ended May 12, 1912. Diphtheria present at 5 places with 6 cases; malaria at 7 places with 48 cases; tuberculosis at 6 places with 7 cases; typhoid fever at 6 places with 8 cases.

IOWA.—Month of March, 1912. Population, 2,224,771. Total number of deaths from all causes, 2,092, including diphtheria 8, measles 3, scarlet fever 18, tuberculosis 63, typhoid fever 23.

MINNESOTA.—Month of January, 1912. Population, 2,075,708. Total number of deaths from all causes, 1,745, including diphtheria 19, measles 2, scarlet fever 18, tuberculosis 205, typhoid fever 23.

Month of February, 1912. Total number of deaths from all causes, 1,584, including diphtheria 21, measles 1, scarlet fever 10, smallpox 3, tuberculosis 198, typhoid fever 16.

UTAH.—Month of April, 1912. Population, 373,351. Total number of deaths from all causes, 320, including diphtheria 1, measles 1, scarlet fever 4, tuberculosis 8, typhoid fever 1. Cases reported: Diphtheria 24, measles 88, scarlet fever 61, smallpox 267, tuberculosis 7 (incomplete), typhoid fever 10.

FOREIGN AND INSULAR.

CHINA.

Hankow—Typhus Fever.

Consul Greene reports the occurrence of 1 case of typhus fever with 1 death during the two weeks ended April 27, 1912.

Hongkong—Plague—Smallpox.

Surg. Brown reports: During the week ended April 13, 1912, 36 cases of plague with 36 deaths and during the week ended April 20, 66 cases with 55 deaths were reported at Hongkong. During the week ended April 13, 27 cases of smallpox with 21 deaths and during the week ended April 20, 16 cases with 8 deaths were reported.

Plague-Infected Rats.

During the two weeks ended April 20, 4,463 rats were examined for plague infection. Of this number 32 were found to be plague-infected.

GREAT BRITAIN.

Liverpool—Yellow Fever on Vessel.

The medical officer of health reports the arrival of the steamship *Gladiator*, May 14, from Cabedello, Brazil, with a case of yellow fever in the convalescent stage on board. The case was detained two days at the port sanitary hospital and discharged May 18.

The *Gladiator* left Pernambuco for Liverpool April 13.

GREECE.

Cerebrospinal Meningitis.

Consul General Gale at Athens reports: During the week ended May 11, cerebrospinal meningitis was reported in 19 localities in Greece, with 68 cases. Of these, 7 cases were reported at Athens and 3 at Piræus.

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred February 9, 1912; 2 fatal cases February 25, 1912; and a fatal case March 18, 1912. During the week ended March 2, 1912, 49 plague-infected rats were found. The last plague infected rat was found April 17, 1912. At Hilo a plague-infected rat was found during the week ended June 10, 1911, and 2 plague infected rats were reported found February 29, 1912.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

	Week ended May 4.	Week ended May 11.
Total rats and mongoose taken	390	433
Rats trapped	371	421
Mongoose trapped	15	12
Rats killed by sulphur dioxide	4	....
Examined bacteriologically	306	383
Classification of rats trapped:		
Mus alexandrinus	31	69
Mus musculus	91	62
Mus norvegicus	17	26
Mus rattus	232	264
Classification of rats killed by sulphur dioxide:		
Mus alexandrinus	1	....
Mus rattus	3	....
Average number of traps set daily	1,720	1,720

ITALY.

Examination of Emigrants.

Surg. Geddings, at Naples, reports:

Vessels inspected at Naples, Messina, and Palermo, week ended May 11:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 6	San Giorgio	New York			
8	Duca d'Aosta	do	1,183	190	1,650
9	San Giorgio	do	1,037	160	1,280
10	Moltke	do	855	135	1,150
	Total		3,075	485	4,080

MESSINA.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 7	San Giorgio	New York	187	31	212

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 7	Martha Washington	New York			
8	San Giorgio	do	342	350	100
9	Duca d'Aosta	do	221	200	160
11	Moltke	do	78	80	40
	Total		641	630	300

JAPAN.

Kobe—Plague on Vessel from Hongkong.

Surg. Irwin at Yokohama reports, May 13: The steamship *Panama Maru* was detained at quarantine at Kobe May 8, a case of plague having been found among the steerage passengers. The vessel had just arrived from Hongkong.

MEXICO.

Typhus Fever.

At Aguascalientes, Consul Schmutz reports the occurrence of 1 death from typhus fever during the week ended April 28, and 3 deaths during the week ended May 12, 1912.

At Mexico City, Consul General Shanklin reports as follows: Week ended March 23, 49 cases of typhus fever with 22 deaths; week ended March 30, 69 cases with 11 deaths; week ended April 6, 39 cases with 8 deaths; week ended April 13, 49 cases with 10 deaths; week ended April 20, 51 cases with 12 deaths.

Puerto Mexico—Further Relative to Yellow Fever.[1]

Acting Asst. Surg. Thompson reports that the patient whose death from yellow fever was reported May 25 left San Juan Bautista, Tabasco, May 10, for Frontera, became ill May 14 at Frontera, left Frontera May 18, and arrived May 19 at Puerto Mexico on the steamship *Tabasco*. The diagnosis of yellow fever was confirmed by autopsy.

NEW ZEALAND.

Auckland—Examination of Rats.

The following information was received from the department of health of New Zealand: During the month of March, 1912, 541 rats were examined at Auckland for plague infection. No plague-infected rat was found.

The last plague-infected rat was found May 31, 1911.

PHILIPPINE ISLANDS.

Manila—Quarantine against Chinese ports—Vaccination of crews.

Chief Quarantine Officer Heiser reports April 25:

PLAGUE.

Since the report for the week ended April 6,[2] no new developments have occurred in the plague situation, except the increase of plague in Hongkong to 66 cases and 55 deaths for the week ended April 20. Since Hongkong is only from 48 to 72 hours' steaming distance from Manila, every possible precaution is necessary to prevent the introduction of the disease into the Philippines. No cases of plague developed among the personnel of the steamer *Zafiro*, quarantined April 6, and all were released at the completion of the detention, April 14.

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[1] Public Health Reports, May 31, 1912, p. 881.

[2] Public Health Reports, May 24, 1912. Page 820.

Further investigations and the completion of experiments by the bureau of science confirmed the original diagnosis of plague in the case from the *Loongsang*, and also in the case from the *Zafiro*.

During the week 93 persons were in detention at the Mariveles Quarantine Station, serving their 7 days' quarantine. They were inspected daily. One suspect with a temperature of 41° was isolated April 20 and held under observation.

QUARANTINE AGAINST AMOY.

In view of the spread of plague along the China coast and its sharp increase, as well as the insidious nature of the disease, and the fact that steerage passengers from Hongkong would travel via Amoy from Hongkong to Manila to avoid the quarantine detention of 7 days at Mariveles, it was necessary to impose a quarantine at Mariveles on all steerage passengers arriving in the Philippines from Amoy. In accordance, a circular letter promulgating the order was issued April 15, 1912, a copy of which follows:

[Circular letter.]

UNITED STATES TREASURY DEPARTMENT.
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF THE CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,
Manila, P. I., April 15, 1912.

To the owners, agents, and masters of vessels and others concerned.

GENTLEMEN: In view of the presence and steady increase of plague on the China coast, I have the honor to state that, beginning this date, all steerage passengers, or those who ordinarily travel as such, coming from Amoy, will be quarantined at the Mariveles Quarantine Station for a period of seven days, unless the medical officer of the United States Public Health and Marine-Hospital Service at Amoy certifies that they have undergone such quarantine detention at that port before sailing. Masters of inward-bound vessels from Amoy should be instructed to call at Mariveles and leave such passengers, and be prepared to furnish them with the necessary food while they are undergoing the quarantine detention.

Respectfully,

VICTOR G. HEISER,
Passed Assistant Surgeon, Chief Quarantine
Officer for the Philippine Islands.

SMALLPOX.

Vaccination of all arriving persons from the China coast is being carried out. They are vaccinated on arrival, either on board after inspection, or later, whichever is most convenient.

The vaccination of all members of crews of interisland vessels at ports of entry is made the subject of constant attention. Vessels, however, take new members of crews at small ports on their interisland schedule. Recently a vessel embarked two new firemen from a vessel from Australia. They were Filipinos, and desired to work on a home boat. Within 16 days after employment on the local boat both developed smallpox. To reduce these occurrences to a minimum, and prevent quarantine of interisland boats on account of quarantinable diseases among the crews, a circular letter was issued calling the attention of the shipping firms and others to the necessity of having every member of the crews of vessels vaccinated, and making the owners of the vessel liable for the expense of quarantine caused by unvaccinated members of the crew having smallpox. The circular follows:

[Circular letter.]

United States Public Health and Marine-Hospital Service,
Office of the Chief Quarantine Officer
for the Philippine Islands,
Manila, P. I., April 9, 1912.

To masters, owners, and agents of vessels, and others concerned.

Gentlemen: In view of the fact that smallpox is again occurring among the crews of interisland vessels, attention is invited to the fact that this is caused by the officers of vessels disregarding the advice of this bureau by taking aboard new members of the crews who do not possess vaccination cards from the quarantine service. It has been the constant endeavor of this service to have every crew frequently vaccinated, and thus prevent the loss of time and expense of quarantine and disinfection. It is therefore urged that no new crews be employed every member of which does not possess a vaccination card. If a person applying for a position on an interisland vessel does not have a vaccination card, he should be sent to the quarantine office at once to be vaccinated before being allowed to go aboard.

Your assistance and cooperation in this matter are necessary. The expense of disinfections of vessels due to failure to have crews vaccinated will hereafter be made a charge against the vessel.

Respectfully,

Victor G. Heiser,
Passed Assistant Surgeon,
Chief Quarantine Officer for the Philippine Islands.

SENEGAL.

Plague.

The American consul at Sierra Leone reported, May 29, the presence of plague in Senegal.

TRIPOLI.

Tripoli—Typhus Fever.

Consul Wood reports the occurrence of 9 deaths from typhus fever during the week ended April 28, 1912.

WEST INDIES.

Grenada—Plague.

Consular Agent Dean at Grenada reports the occurrence of a case of plague, May 2, in a person who arrived from Trinidad May 1. The case ended fatally May 7.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED JUNE 7, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State, and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Apr. 7-13	9	6	
Moulmine	...do	6	6	
Rangoon	Mar. 1-31	39	38	
Indo-China:				
Saigon	Apr. 16-22	65	56	
Siam:				
Bangkok	Mar. 24-Apr. 20		531	
Turkey in Asia:				
Adana	Apr. 9-15	53	21	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended June 7, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Rio de Janeiro	Apr. 7-30	1	1	
Great Britain:				
Liverpool	May 14-18	1		Convalescent on s. s. Gladiator from Cabedello, detained at Port Sanitary Hospital.
Mexico:				
Merida	May 3-25	1	1	

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong	Apr. 14-20	66	55	
Dutch East Indies:				
Provinces—				
Kediri	Jan. 1-Mar. 2[1]	25	24	
Madiven	do	53	49	
India:				
Rangoon	Mar. 1-31	65	63	
Indo-China:				
Saigon	Apr. 16-22	15	5	
Japan:				
Formosa	Apr. 14-20	13	11	
Kobe	May 8	1		From s. s. Panama Maru from Hongkong.
Mauritius	Mar. 22-28	7	5	
Persia:				
Reshire	Feb. 6	2		
Senegal	May 29			Present.
Siam:				
Bangkok	Mar. 24-Apr. 30		3	
West Indies:				
Grenada	May 2-7	1	1	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	Apr. 16-22	1	1	
Argentina:				
Rosario	Feb. 1-29		1	
Brazil:				
Rio de Janeiro	Apr. 14-20	1		
Canada:				
Fernie	May 19-25	1		
Montreal	do	2		
Ottawa	do	1		
Quebec	do	4		
China:				
Hongkong	Apr. 14-20	16	8	
Great Britain:				
Bristol	May 12-18	1		
India:				
Rangoon	Mar. 1-31	222	66	
Indo-China:				
Saigon	Apr. 16-22	5		
Italy:				
Palermo	May 5-11	9	3	
Japan:				
Formosa	Apr. 14-20	1		
Kobe	May 7	1		From s. s. Manchuria from Hongkong via Shanghai.
Mexico:				
Juarez	May 19-25	1	1	
Mazatlan	May 15-21		3	
Mexico	Apr. 7-20	45	23	
San Juan Bautista	May 25	2		
San Luis Potosi	Mar. 17-23		1	
Portugal:				
Lisbon	May 5-11	9		

[1] Bulletin Quarantenaire d'Egypte, Jan. 21-May 9, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended June 7, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia:				
Riga	do	2		
Warsaw	Mar. 17-30	23	7	
Siam:				
Bangkok	Mar. 24-Apr. 20		106	
Spain:				
Barcelona	Apr. 28-May 13		1	
Cadiz	Apr. 1-30		2	

REPORTS RECEIVED FROM DEC. 30, 1911, TO MAY 31, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	Aug. 30-Sept. 6: 2 fatal cases from s. s. Episticia from Asia Minor, p. 1635, Vol. XXVI.
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	July 2-15, 1911: Cases, 5; deaths, 4, p. 1300, Vol. XXVI.
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, Vol. I.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-Apr. 6	131	106	
Bombay	Apr. 7-27	22	17	
Calcutta	Nov. 5-Mar. 30		1,090	
Madras	Nov. 26-Apr. 27	556	452	Madras Presidency Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-Feb. 29: Cases, 18,267; deaths, 11,563.
Moulmine	Feb. 18-Apr. 6	21	18	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Feb. 29	104	86	
Indo-China:				
Saigon	Nov. 20-Apr. 15	1,744	1,211	And vicinity.
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 28 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 31, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands				Third quarter, 1911: Manila, 1, fatal case; Provinces, 27 cases and 22 deaths. Fourth quarter, 1911: Manila, no case and no death; Provinces, 22 cases, 20 deaths.
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 182; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Dolilju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 96; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Mar. 24		1,244	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 328. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 27: Cases, 181; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2-Apr. 8	46	14	
Aleppo	Jan. 26-Apr. 20	46	29	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14-26	29		
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 31, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Mar. 23-25	6	1	
Ceara	Jan. 1-Feb. 29		5	
Manaos	Nov. 19-May 4		68	
Para	Mar. 3-9	2	2	Dec. 9-16: 1 fatal case.
Pernambuco	Jan. 1-Apr. 15		20	Apr. 2: Epidemic.
Rio de Janeiro	Mar. 17-Apr. 6	3	2	
Canal Zone:				
Culebra Island quarantine				In January 1 case from a vessel from Guayaquil. Mar. 2-4 1 fatal case from s. s. Chile from Guayaquil.
Chile:				
Tocopilla	Apr. 11	90	25	And vicinity. Apr. 20: Still present.
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Apr. 15	14	6	
Guayaquil	Nov. 16-Apr. 15	147	66	
Huigra	Feb. 1-29	1		
Milagro	Feb. 1-Apr. 15	16	7	
Naranjito	do	6	4	
Yaguachi	Feb. 1-29	1		
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb. 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida	Nov. 12-Mar. 23	20	9	Total Aug. 1, 1911-May 25, 1912: Cases, 67; deaths, 31.
Puerto Mexico (Coatzacoalcos).	Feb. 28-May 25		2	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
San Juan Bautista	May 11-May 25	5	1	
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Mar. 31	30		Dec. 1-30, 10 deaths, and Jan. 15-Mar. 31, 12 deaths, includin previous reports.
La Guaira	Mar. 17-Apr. 1	2	2	
Macuto	Mar. 16-19	1	1	
Maiquetia	Feb. 24-Apr. 30	4	4	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
Barbados—				
Bridgetown	Apr. 27	1	1	From steamship Francis, from Para.
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Arabia:				
Aden	Mar. 5-25	2	1	
Azores:				
Fayal	Jan. 10			Still present.
Teceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Apr. 20	24	15	
Pernambuco	Oct. 1-Feb. 29		9	
Rio de Janeiro	Nov. 12-Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12-Apr. 6	24	11	
Pisagua	Nov. 1-30	8		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 31, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy	Jan. 13		1	
Chaochowfu	Mar. 10-Apr. 13			Present.
Hongkong	Dec. 9-Apr. 13	178	157	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1 deaths, 1,324. Dec. 31-M Cases, 99; deaths, 95.
Pasoeroean Residency, Malang District.	Nov. 12-Apr. 13	152	104	
Soerabaya	Oct. 17-27	2		
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Report available because of revo
Egypt				Total Jan. 1-Dec. 31, 1911: 1,656; deaths, 1,041, in cases previously reported
Cairo	Apr. 22-25	2	1	
Alexandria	Mar. 22	1	1	
Provinces—				
Assiout	Jan. 1-Apr. 24	62	40	Sept. 11-16: Cases, 50; de
Assouan	do	31	19	
Behera	Jan. 1-Apr. 15	5	3	Sept. 11-16: Cases, 11; de
Beni Souef	Feb. 16-Apr. 20	30	9	
Fayoum	Jan. 1-Apr. 24	3	1	
Galioubeh	Jan. 1-Apr. 23	5	3	Oct. 5-Dec. 26: Case, 1.
Garbieh	Jan. 1-Apr. 24	24	8	
Carchieh	Apr. 21-22	6	4	
Girgeh	Mar. 28	1	1	
Kena	Jan. 1-Apr. 25	96	73	Nov. 20-Dec. 13: Cases, 3 3.
Menouf	Feb. 2-Apr. 23	9	2	
Minieh	Jan. 1-Apr. 23	26	6	Dec. 13: Case, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via B
Great Britain:				
Liverpool	Apr. 27-30	1	1	In the Royal Southern from s. s. Italian Prin arrived at Liverpool laden with fruit and Mediterranean ports.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-Apr. 27	1,061	878	
Calcutta	Nov. 11-Mar. 31		462	
Karachi	Nov. 26-Apr. 27	994	860	Total year 1911: Ca deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Feb. 29	166	158	
Bombay Presidency and Sind.	Oct. 29-Mar. 23	58,396	42,824	
Madras Presidency	do	10,129	7,869	
Bengal	do	37,491	31,764	
United Provinces	do	86,612	76,987	
Punjab	do	10,541	8,082	
Burma	do	1,428	1,302	
Eastern Bengal and Assam.	Jan. 1-Feb. 24	2	2	
Central Provinces	Oct. 29-Mar. 23	26,600	21,144	
Coorg	do	88	52	
Mysore State	do	8,631	6,688	
Hyderabad State	do	25,820	23,394	
Central India	do	9,096	7,453	
Rajputana and Ajmere Merwara.	do	1,533	1,234	
Kashmir	Feb. 3-Mar. 23	114	51	
North West Province	Oct. 29-Feb. 24	2	2	Total for India, Oct Cases, 276,483; de Total year 1911: C deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Apr. 15	54	14	
Japan:				
Formosa	Mar. 7-Apr. 13	79	63	
Nagasaki	Apr. 20	1		On the s. s. Tacoma Hongkong and Sh
Mauritius	Nov. 3-Mar. 21	102	61	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 31, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Persia:				
Bushire:	Feb 4–Apr. 13	322	219	
Mohammerah	Apr. 3	1		
Peru:				
Departments—				
Callao	Oct. 1–21	1		City, in November, 1 case; in January, 3 cases with 2 deaths; Mar. 1–26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Apr. 10, 22 cases in the lazaretto at Trujillo. Apr. 22 still present.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Manila				Apr. 6, a fatal case of pneumonic form in a member of the crew on s. s. Zafiro, arrived Apr. 4 from Hongkong.
Russian Empire:				
Astrakhan, government	Sept. 21–Jan. 7	201	180	Including 73 cases and 63 deaths reported on p. 2098, Vol. I.
Siam:				
Bangkok	Nov. 4–Mar. 23		5	
South Africa:				
Durban				Total: Jan. 14–Apr. 19, cases 27, deaths 22.
Straits Settlements:				
Singapore	Nov. 5–Apr. 13	31	27	
Turkey in Asia:				
Basra				Feb. 13, a fatal case in a stoker on s. s. Nicomedia from Bushire.
Jiddah	Jan. 13–Mar. 27	16	9	Apr. 10–12, 3 cases from s. s. Adalia from Newcastle.
Venezuela:				
Caracas	Mar. 12–Apr. 22	6	2	
West Indies:				
Trinidad	Apr. 2–May 1	6	4	
At sea	Mar. 1–11	1	1	On s. s. Macedonia from Bombay to Aden.
Do	Apr. 1	1	1	Pneumonic on s. s. Loongsang, en route from Hongkong to Manila.

SMALLPOX.

Algeria:				
Algiers	Nov. 1–30		1	
Oran	Jan. 1–31	2	1	
Arabia:				
Aden	Nov. 28–Apr. 8	22	10	And vicinity.
Argentina:				
Buenos Aires	Jan. 1–31		2	Oct. 1–31, 6 deaths. No deaths in November or December, 1911.
Rosario	Oct. 1–Jan. 31		40	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14–20	2		
Budapest	Jan. 4–10	25		
Galicia	Dec. 24–Apr. 13	30	1	
Krain	Jan. 14–20	7		
Trieste	Dec. 3–Apr. 6	2		From s. s. Baron Call from Beirut.
Tyrol	Jan. 14–Mar. 9	3		
Vienna	Mar. 25–30	1		
Brazil:				
Bahia	July 1–31		1	
Para	Mar. 24–May 4	10	5	Case Mar. 30 from Alagoas.
Pernambuco	Oct. 1–Apr. 15		838	
Rio de Janeiro	Nov. 26–Apr. 6	31	1	
Santos	Dec. 12–23		1	
British East Africa:				
Mombasa	Mar. 1–31	5		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, May 31, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
British Columbia—				
Fernie	Feb. 26-Mar. 16	5	....	
Nelson	Dec. 24-30	1	....	
Vancouver	Apr. 14-20	1	....	
Victoria	Feb. 4-10	1	....	
Vinal Haven	May 17	7	....	5 miles from Eastport, Me.
Manitoba—				
Winnipeg	Jan. 14-Apr. 20	4	....	
New Brunswick—				
Summerstown	Apr. 12	....	....	Epidemic; 10 miles from Cornwall.
Nova Scotia—				
Halifax	Mar. 24-Apr. 6	2	....	
Ontario—				
Hamilton	Apr. 14-27	16	....	
Kingston	Dec. 19-23	1	....	
Ottawa	Dec. 10-May 11	105	1	
Sarnia	Oct. 17-Mar. 23	43	....	
Toronto	Jan. 6-Apr. 20	5	1	
Windsor	Feb. 4-Mar. 16	8	....	
Quebec—				
Montreal	Dec. 17-May 11	32	....	
Quebec	Dec. 10-May 18	295	2	
Yukon—				
Dawson	Apr. 1-6	1	....	
Ceylon:				
Colombo	Nov. 12-Apr. 13	4	....	And vicinity.
Chile:				
Iquique	Dec. 10-Mar. 16	4	2	
La Serena	Nov. 21-30	14	....	
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Apr. 13	70	....	
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chaochowfu	Mar. 30	....	....	Present.
Chenghai	Jan. 29-Apr. 13	....	....	Do.
Chungking	Nov. 18-Apr. 6	....	....	Do.
Dalny	Mar. 3-Apr. 6	11	2	
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-Mar. 30	706	523	
Kityang	Jan. 21-Apr. 13	....	....	Do.
Nanking	Dec. 10-Apr. 27	....	....	Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2	....	....	Present.
Cuba:				
Habana	Dec. 19-Jan. 19	2	....	Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12-Apr. 13	60	17	
Egypt:				
Cairo	Dec. 10-Apr. 29	16	2	
Port Said	Jan. 30-Feb. 4	1	....	
France:				
Havre	Mar. 10-16	....	4	
Marseille	Jan. 1-Apr. 30	....	7	Nov. 1-30, 1 death.
Paris	Dec. 3-May 4	125	2	
Germany	....	....	....	Total, Dec. 31-May 11; cases, 169.
Hamburg	Jan. 21-Apr. 27	7	....	
Gibraltar	Feb. 27-Mar. 3	1	....	
Great Britain:				
Bradford	Apr. 28-May 4	1	....	
Bristol	Jan. 29-May 11	3	....	
Liverpool	Mar. 17-Apr. 17	2	1	Case Apr. 13, an American from the s. s. Arabic.
London	Jan. 14-Apr. 20	10	1	
Southampton	Mar. 3-9	1	....	
West Hartlepool	Feb. 18-Mar. 9	2	....	
India:				
Bombay	Nov. 19-Apr. 27	1,118	532	
Calcutta	Nov. 19-Mar. 30	....	37	
Karachi	Apr. 1-6	1	1	
Madras	Nov. 26-Apr. 27	211	83	
Rangoon	Oct. 1-Feb. 29	220	55	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 31, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indo-China:				
Saigon	Nov. 13-Apr. 15	50	11	
Italy:				
Genoa	Dec. 1-Apr. 15	47	2	
Leghorn	Dec. 16-May 11	113	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-May 11	106	1	
Palermo	Nov. 26-May 4	2,652	901	
Rome	Jan. 1-Mar. 31	31	3	
Turin	Jan. 15-May 12	3		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Formosa	Mar. 3-16	3		
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-28	2	1	Jan. 20, 1 case from s. s. Suverio from Hongkong; Jan. 28, 1 case from Shingo Maru.
Nagasaki	Feb. 12-18	1		
Nogahama	Mar. 17-23	1		On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-May 11	9	5	
Juarez	Dec. 19-May 18	20	5	
Magdalena	Dec. 23-Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-May 18		14	
Mexico	Nov. 26-Apr. 6	256	121	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	Mar. 23, present in vicinity.
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Mar. 16	8	7	
Tampico	Dec. 1-Apr. 10		16	
Tapachula	Nov. 1-May 4		19	
Philippine Islands				Third quarter, 1911: Manila, 9 cases; no deaths. Fourth quarter, 1911: 38 cases.
Manila (on arriving vessel)				Apr. 1 to 6, present on the steamers Serantes and Sotolongo; Apr. 2-9, 8 cases among the crew of the United States Army transport Warren, from ports in China and Japan.
Portugal:				
Lisbon	Dec. 9-May 4	58		
Roumania	Jan. 1-31	2,935	143	Total: Jan. 1-Feb. 29, cases, 5,847; deaths, 247.
Russia:				
Batum	Dec. 1-Mar. 31	2		
Libau	Dec. 17-Apr. 28	3		
Moscow	Nov. 19-Apr. 20	75	10	
Odessa	Nov. 26-Apr. 27	37	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-May 4	69		Oct. 1-Jan. 31: Deaths, 10.
St. Petersburg	Nov. 19-Apr. 27	231	54	
Warsaw	Nov. 5-Mar. 16	414	200	
Siam:				
Bangkok	Nov. 5-Mar. 23		2,175	
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-Apr. 6	5		
Johannesburg	Jan. 7-Feb. 10	36		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to May 31, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Spain:				
Almeria	Apr. 1-30		1	
Barcelona	Feb. 6-May 3		3	
Cadiz	Nov. 1-Mar. 31		29	
Madrid	Dec. 1-Mar. 31		16	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-Apr. 30		12	
Valencia	Dec. 3-May 11	435	18	
Straits Settlements:				
Penang	Feb. 11-17	1		
Singapore	Nov. 19-Apr. 6	38	15	
Switzerland:				
Cantons—				
Aargau	Apr. 7-13	1		
Oberwalden	Jan. 14-20	1		
St. Gall	Mar. 30-Apr. 6	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Apr. 13		54	
Turkey in Asia:				
Beirut	Dec. 3-May 4	1,545	107	
Turkey in Europe:				
Constantinople	Dec. 4-May 12		216	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Apr. 30	15	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	May 4	163,084	71								1	1		1
Do	May 11		66									1	1	
Aden	Apr. 22	45,859	19	7				1						
Aguascalientes	May 19	40,000	82								2		11	
Aix la Chapelle	Apr. 27	157,703	55	6										5
Antwerp	May 4	316,604	78	8									10	
Barcelona	May 13	590,272	321	28				1		7		1	1	3
Barmen	Apr. 27	171,000	36	8								2	1	
Batavia	Apr. 13	217,630						2						
Beirut	May 4	80,000	20	2						3				
Belfast	May 11	391,151	115	27								1	1	6
Berlin	May 12	2,072,429	551	89						2	8	9	8	5
Birmingham	May 11	842,512	203	11							1	2	1	
Bordeaux	May 4	253,000	85	9								1	7	
Do	May 11		116	10									8	
Bradford	May 4	289,618	78	10						1			5	
Do	May 11		88	2						1	1	2	2	
Bremen	May 4	246,850	72	9							2	4	1	1
Bristol	May 11	359,400	104	9									8	
Do	May 18		88	6								1	7	4
Bombay	Apr. 27	979,445	1,022	60	176	6		81					7	
Budapest	do	1,000,000									2	1	1	
Cairo	Apr. 29	689,439	435	24	1				5	3		4		
Catania	May 17	207,000	79	4							1	1	2	
Chemnitz	Apr. 27	300,018	79	9								1		1
Christiania	May 1	245,000	81	14								1		

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Coburg	May 5	24,174	6	1								1		
Cologne	May 4	528,738	145	24								1	3	
Colombo	Apr. 20	227,026	118	11						4				
Constantinople	May 12	1,000,000	256	28				9		4	3	1	11	
Copenhagen	Apr. 27	465,000	152	8							1		1	1
Do	May 4		137	17						1	1	3		1
Dresden	Apr. 27	555,300	140	24							1	4		1
Do	May 4	557,800	147	30							2	1		1
Dundee	May 11	171,006	62	6								1	4	3
Edinburgh	..do	321,200	98	14									6	3
Erfurt	May 4	126,560	30	4								2		
Ghent	..do	166,235	58	7									1	1
Glasgow	..do	785,600	252								3	2		
Guadalajara	May 18	119,468	108							1				
Hamburg	May 11	953,079	269	29						1	1	6		6
Havre	May 21	136,159	65	5						2	1			1
Hongkong	Apr. 20	336,488			55			8		2				
Hull	May 11	282,987	67							1		1		
Juarez	May 18	6,500	9	2										
Do	May 25		10	2				1						
Karachi	Apr. 27	157,290	139		81								9	
Kingston	May 4	57,379								5				
Do	May 11									1				
Kobe	Apr. 28	418,646								1		3		
Konigsberg	May 4	252,200	75	5								1		1
Leeds	May 11	445,568	123	13								2		1
Leipzig	May 4	605,755	150	23								3		2
Liege	..do	166,392	51	4							1		2	
Leith	May 11	81,000	27	5									1	
Liverpool	..do	752,055	259	19							1		11	5
Do	May 18		243	20							2	3	17	14
London	May 11	7,340,119	1,770	48						4	4	16	30	
Lyon	Mar. 24	523,796	170	29							1	5		
Do	Mar. 31		198	45						2	2	2	3	
Do	Apr. 7		174	30								5	5	
Do	Apr. 13		178	30							2	2	1	
Do	Apr. 20		185	27						1	1	5	2	
Magdeburg	..do	284,743	97	8							1	1		1
Manaos	May 4	52,000	45	4			2							
Manchester	..do	714,427	225	19						2	1	2	13	12
Do	May 11		217	23							1	1	12	12
Mannheim	Apr. 20	201,201	39	5								1		1
Do	May 4		39	7							1			
Madras	Apr. 27	518,660	304			1		2		1			4	
Maracaibo	May 10	50,000	11	4						1				
Mazatlan	May 14	22,000	13					1						
Do	May 21		20					3						
Mexico	Mar. 30	719,052	431	16				6	11		2		3	4
Do	Apr. 6		414	25				14	8			3	4	3
Do	Apr. 13		404	14				10	10			3		1
Do	Apr. 20		449	16				13	12		2		7	5
Montreal	May 25	466,197	185	22						1	4	3	1	4
Munich	May 4	610,000	163	25									1	
Nagoya	Apr. 20	426,968	149									2		
Do	Apr. 27		108									1		
Nottingham	May 4	260,000	74	3							2		6	1
Nuremberg	Apr. 6	344,797	109	16							1		1	
Do	Apr. 13		112	21									2	
Do	Apr. 20		103	13							1		1	
Odessa	Apr. 27	179	28						1					2
Do	May 4	575,000	187	30					3				1	1
Ottawa	May 18	90,000	40	3						1				
Palermo	May 11	340,000	136	8				3	1	2		1		
Para	..do	185,000	85	6										1
Paris	Apr. 20	2,888,110	1,047	181						4	8	7	51	10
Do	May 4		1,000	242						4	8	10	33	9
Patras	May 5	40,000	8							1				
Plymouth	May 11	124,180	29							2			2	
Port Elizabeth	Apr. 20	31,692	12	4						2				
Do	Apr. 27		21	4						1				

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Port of Spain	May 4	60,000	49	8									2	
Prague	..do	225,817	78	17						1			2	
Rangoon	Apr. 13	293,316	156	9	7	5		15						
Rio de Janeiro	..do	921,987	354	67								1	1	3
Do	Apr. 20		333	57			1			1			2	4
Do	Apr. 27		383	70						1		1	3	2
Saigon	Apr. 15	220,000	26		2	24								
Do	Apr. 22		61		5	56								
San Luis Potosi	Mar. 23	82,496	54	6				1		2		1		
Sheffield	May 4	455,000	121	16						1				
Do	May 11		123	12										
Singapore	Apr. 13	303,328	224	27	2									
Smyrna	..do	400,000		8						2				
Do	Apr. 20			6					1	3	1	2		
Do	Apr. 27			10						1		5		
Do	May 4			5					1	3		2		
Southampton	May 11	120,896	36	3									1	1
Stockholm	Apr. 27	346,599	100	21									9	1
Do	May 4		108	24								2	3	
Stoke-on-Trent	May 11	237,153	80	5						1				1
Tapachula	Mar. 7	25,000	33	2				1						1
Do	Mar. 23		30	1										3
Do	Mar. 31		25	2										2
Tientsin	Apr. 27	465,000	32	8							1	1		
Trieste	May 4	235,999	93											2
Tripoli	May 5		48	3					1	3				
Turin	May 12	430,770	140	6						1		2	1	
Valencia	May 11	235,000	97	8				2				1		
Vienna	Apr. 27	2,081,335	709	128							7	8	9	7
Vigo	May 4	41,500	19	3								1		
Warsaw	Mar. 23	97,093	256	32				4		2	1		1	2
Do	Mar. 30		232	31				3		2	3	1		3
Winnipeg	May 18	151,958	34	3							1			1
Yokohama	Apr. 29	444,039										1		

MORTALITY—FOREIGN AND INSULAR COUNTRIES AND CITIES (Untabulated).

ARGENTINA—*Rosario.*—Month of February, 1912. Population 210,735. Total number of deaths from all causes 376, including diphtheria 8, smallpox 1, tuberculosis 38, typhoid fever 19. Remarks: Typboid fever epidemic.

FRANCE—*Marseille.*—Month of April, 1912. Population 550,619. Total number of deaths from all causes 844, including diphtheria 4, measles 1, smallpox 2, tuberculosis 150, typhoid fever 8.

GERMANY—*Strassburg.*—March, 1912. Population 182,426. Total number of deaths from all causes 262, including diphtheria 6, measles 2, scarlet fever 3, tuberculosis 23, typhoid fever 2.

GREAT BRITAIN.—Week ended May 4, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 13.9 per 1,000 of the population, which is estimated at 17,639,816.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 20.2 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Armagh, viz, 6.9, and the highest at Newtownards, viz, 34.3 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 15.6 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Falkirk, viz, 9.2, and the highest at Greenock, viz, 19.9 per 1,000. The total number of deaths from all causes was 652, including diphtheria 4, measles 49, scarlet fever 3.

SIAM—*Bangkok.*—Four weeks ended April 20, 1912. Population 600,000. The deaths include cholera 531, plague 3, smallpox 106.

SPAIN—*Cadiz.*—Month of April, 1912. Population 67,306. Total number of deaths from all causes 183, including diphtheria 2, measles 3, smallpox 2, tuberculosis 20.

Huelva.—Month of March, 1912. Population 28,982. Total number of deaths from all causes 125, including measles 37, tuberculosis 9.

TRIPOLI—*Tripoli.*—Two weeks ended April 28, 1912. Population 50,000. Total number of deaths from all causes 106, including tuberculosis 6, typhoid fever 12, typhus fever 9.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS

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LEPROSY IN THE UNITED STATES.

In order to ascertain the number of lepers in the United States in so far as the cases were a matter of record, a letter was written to the health authorities of each of the several States, Hawaii, Porto Rico, and the Philippine Islands asking for a statement of the number of new cases reported during the calendar year 1911 and of the number present January 1, 1912. A tabular statement of the data thus obtained follows on page 942.

There was reported as being present January 1, 1912, a total of 146 cases in the continental United States. Of these, 40 were new cases coming first under official recognition during the year 1911. This number, however, necessarily represents only a part of those present, as in many States the disease is not notifiable and in others the requirement of notification is for various reasons difficult of enforcement.

Leprosy has been specifically made a notifiable disease in the following 18 States and the District of Columbia: Alabama, California, Connecticut, District of Columbia, Florida, Idaho, Illinois, Indiana, Iowa, Massachusetts, Nebraska, New Jersey, New York, Oregon, Pennsylvania, South Carolina, Utah, Washington, Wisconsin. It is also notifiable in Hawaii, Porto Rico, and the Philippine Islands.

In Michigan a regulation of the State board of health specifies that cases of leprosy shall be reported for statistical purposes. In certain other States the law requires that cases of all infectious or contagious diseases shall be reported, and among these leprosy would naturally in most cases be included. However, in the absence of a statement of the diseases that shall be construed to be infectious or contagious, it would appear to be left to the personal opinion of each practicing physician as to which diseases came properly under such a classification, and were, therefore, notifiable. Under these conditions the reports are likely to be incomplete.

In 1901 a commission composed of officers of the Marine-Hospital Service made a careful study of the prevalence of leprosy in the United States. They attempted to locate all cases possible, and to do this carried on an extensive correspondence with State and local health authorities and practicing physicians, and in addition a member of the commission visited certain localities to verify the accuracy of reports. A total of 278 cases was found at that time, although the commission believed that the number present was greater and that there were undoubtedly cases which they had been unable to locate.

Of the 278 cases reported by the commission, 145 were born in the United States, 120 in foreign countries, and the place of birth of 13 was unknown. Of the total number, 186 were reported as having probably contracted the disease in the United States. Of the 278 cases, only 72 were isolated and provided for by the States or cities in which they were domiciled.

Although the number of cases of leprosy reported by the State authorities as present January 1, 1912, was only 146, whereas the commission above referred to found 278 in 1901, it can not properly be inferred that there is a lessened prevalence of the disease. The 146 cases reported as present the first of this year are, with one or two exceptions, isolated and under the control of State or local authorities. These 146 cases are therefore probably comparable with the 72 reported in 1901 as isolated and provided for by States or cities.

During the year 1911 cases of leprosy were diagnosed in 18 States, and January 1, 1912, cases were officially known to be present in 17 States. Three States, namely, California, Louisiana, and Massachusetts, have leprosaria where lepers are isolated and cared for. In the other States cases of leprosy are provided for in various ways and with varying degrees of isolation.

In Porto Rico there were 28 known lepers January 1, 1912. In Hawaii and the Philippines the disease is present to such an extent that its control constitutes one of the important functions of the health authorities.

LEPROSY IN THE UNITED STATES AND INSULAR POSSESSIONS.

Cases Reported During the Calendar Year 1911 and Cases Present Jan. 1, 1912.

	New cases reported during calendar year 1911.	Cases present Jan. 1, 1912.	Remarks.
STATES.			
Alabama	0	0	
Arizona	0	1	Case isolated at Globe 2 or 3 years.
Arkansas			No report.
California	12	23	
Colorado	0	0	
Connecticut	1	1	
Delaware	0	0	
District of Columbia	1	0	
Florida	2	2	
Georgia	0	0	
Idaho	1	0	Case left State.
Illinois	0	0	
Indiana	1	1	Patient died Mar. 3, 1912.
Iowa	0	0	
Kansas	2	1	1 case Mexican laborer; other resident Ellis County.
Kentucky	0	0	
Louisiana	(?)	71	
Maine	0	0	
Maryland	0	0	
Massachusetts	2	13	Of 13 cases mentioned, 9 are men and 4 women.
Michigan	1	1	
Minnesota	3	18	
Mississippi	0	0	
Missouri			No report.
Montana	0	0	
Nebraska	0	0	
Nevada	0	0	
New Hampshire	0	0	
New Jersey	0	0	

LEPROSY IN THE UNITED STATES AND INSULAR POSSESSIONS—Con.

Cases Reported During the Calendar Year 1911 and Cases Present Jan. 1, 1912.

	New cases reported during calendar year 1911.	Cases present Jan. 1, 1912.	Remarks.
STATES—continued.			
New Mexico	0	0	
New York	5	5	These cases were reported in New York City.
North Carolina	0	0	
North Dakota	1	1	
Ohio	0	0	
Oklahoma	0	0	
Oregon	0	0	
Pennsylvania	3	3	
Rhode Island	2	1	
South Carolina	0	0	
South Dakota	0	0	
Tennessee	0	0	
Texas	0	0	
Utah	1	1	
Vermont	0	0	
Virginia	0	0	
Washington	1	2	
West Virginia	0	0	
Wisconsin	1	1	Norwegian woman; origin unknown.
Wyoming	0	0	
Total	40	146	
HAWAII AND THE INSULAR POSSESSIONS.			
Hawaii	65	696	
Philippine Islands	1,142	2,754	
Porto Rico	10	28	1 case died Jan. 16, 1912.
Total	1,217	3,478	

CONNECTICUT.

Dr. Joseph H. Townsend, secretary of the State board of health, reports February 13, 1912, as follows regarding the case occurring in Connecticut: The one case reported during the calendar year 1911 is, so far as I know, the only case that has ever been reported in the State. This case is in a man, a Lithuanian Jew, who has been in this country about 20 years. Fifteen years ago he had frostbites on both feet which did not heal readily, and for the past 10 years he has been an invalid confined to his home, his case having previously been diagnosed as syphilis.

DISTRICT OF COLUMBIA.

Dr. William C. Woodward, health officer of the District of Columbia, reported February 13, 1912, regarding the case occurring in the District as follows: The case reported January 24, 1911, was in a Filipino, age 20 years, who had been brought to the United States by a naval officer as a domestic. He was returned by the health department September 9, 1911, to the Philippine Islands, on board a transport.

INDIANA.

Dr. J. N. Hurty, State health commissioner, reported February 12, 1912, regarding the case of leprosy in Indiana as follows:

One case of leprosy was reported in Indianapolis December 27, 1911. The patient, female, colored, was born in Hawkins County, Tenn. After her thirteenth year she lived in Knoxville until 1908, when she removed to Indianapolis. She never had been farther south than Knoxville. She is the mother of six children, two are living, both grown to adult life. Previous to being attacked she had always been well. In November, 1910, she noticed some blotches on face, arms, and legs, and in March, 1911, consulted a physician, who diagnosed her trouble as lichen planus. Nodules first appeared on face, arms, and ears in October, 1911.[1] (The patient died in March, 1912.) One other case of leprosy was reported in this State about eight years ago. The case we now have we presume would be called sporadic, for we can not in the least degree trace the time and place of infection.

MICHIGAN.

T. B. McClintic, passed assistant surgeon, Public Health and Marine-Hospital Service, reported in June, 1910, regarding the case of leprosy noted in the table as present in Michigan as follows:

The case was located at Calumet, Mich. Name, M. J.; born in Alten, Norway, 38 years ago; father, two sisters, and two brothers all living and apparently in good health; one brother was recently killed in a railroad accident; his mother died of leprosy in Norway on May 13 of this year after an illness of approximately four years. M. J. came to this country from Norway on July 20, 1900, and settled in Calumet. Since his arrival in this country he has not returned to Norway, nor has he seen his mother. He worked in the copper mines in Calumet and while so engaged during the spring of 1904 the first symptoms of the disease made their appearance.

It first appeared in his nose, for the relief of which he had an operation performed. His nasal passages had become occluded and the operation temporarily relieved this. During the summer of the same year (1904) he went to Alaska under contract with the United States Government to herd reindeer, and while there, during the following fall, the trouble with his nose returned and the disease began to manifest itself on his face and hands.

He stated that his face and hands felt as though they had been slightly sunburned.

At the expiration of his one year's contract with the Government in Alaska he returned to Calumet and engaged in mining and carpentering. Since his return he has had exacerbations and remissions of the disease until now he presents a typical picture of a well-advanced case of tubercular leprosy. His hands, face, and feet are simply one mass of tubercles. Scrapings from these tubercles and from the nasal mucous membrane obtained showed microscopically enormous numbers of lepræ bacilli.

The patient and his family are to be isolated. No other cases were found.[2]

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[1] See also Public Health Reports Jan. 26, 1912, p. 128.

[2] Two other cases have been reported in Michigan since Jan. 1, 1912.

MINNESOTA.

Dr. H. M. Bracken, secretary State board of health, reports, February 14, 1912, as follows:

Two of the three cases reported to us last year were in persons American born. One, a woman, had a father and a brother die of leprosy in this country, the brother also American born. The other, a boy, had a leprous mother who died in this country.

Of the 18 cases of leprosy in this State now, 6 are in persons American born. Of these six 1 is a Canadian, the other 5 were born in Minnesota.

The source of origin in the Canadian case is not known, but the origin of all of the other 17 cases was in the immediate family of the leper.

We have no record of leprosy occurring outside of the family of a leper in Minnesota, and we know of many cases where, with a leper in the family, no other cases of leprosy appear. These have been cases where the lepers have been carefully isolated in their own homes.

PHILIPPINE ISLANDS.

Victor G. Heiser, passed assistant surgeon, Public Health and Marine-Hospital Service, and director of health of the Philippine Islands, reports March 23, 1912, as follows:

1. The number of cases of leprosy reported in the Philippines during the calendar year 1911 was 3,339. This includes 2,172 remaining at the Culion leper colony January 1, 1911, and 25 in the Moro Province, not taken to Culion.

2. The number of cases of leprosy present in the Philippines January 1, 1912, was 2,754.

3. The number of cases of leprosy reported from January 1 to March 23, 1912, was 135.

4. In round numbers, there have been collected in the Philippine Islands and transferred to the Culion leper colony 6,000 lepers. Of this number, in round numbers, 3,000 came from the island of Cebu. This island has a population of approximately 700,000, and as the total population of the Philippine Islands is approximately 7,000,000, it will be noted that although it has only one-tenth of the population of the entire islands, it has furnished approximately 50 per cent of the lepers up to date. On this island many instances have come to light which indicate that leprosy is a so-called "house disease." The bureau of health is now collecting statistics, and already has a number of instances on hand in which cases of leprosy have developed year after year after the first leper was taken from a house.

UTAH.

Dr. T. B. Beatty, secretary of the State board of health, reported March 11, 1912, regarding the case of leprosy occurring in Utah as follows: The State board of health received a report of one case of leprosy during the year 1911. The case in question was reported from Uintah County, where the patient still resides. He is described as a man aged 25 years and a native of the Samoan Islands; has resided in Utah five years, and is a homesteader on land which was formerly a part of the Uintah Reservation. The local health officer is under instructions to enforce strict isolation, not permitting him to leave his farm.

The only additional case of leprosy that has been discovered in Utah in recent years was in the person of a native of Greece, who had the macular form of the disease, and was reported in 1910. This patient escaped from the authorities and returned to Greece after having been under observation for a short period.

TRANSPORTATION OF LEPERS IN INTERSTATE TRAFFIC.

AMENDMENT TO INTERSTATE QUARANTINE REGULATIONS.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, May 15, 1912.

To medical officers of the Public Health and Marine-Hospital Service, State and local health authorities, and others concerned:

The following amendment is hereby made to the Interstate Quarantine Regulations promulgated by this department September 27, 1894, and amended August 17, 1905, and June 24, 1909, said amendment and regulations being in accordance with section 3, act of Congress approved February 15, 1893.

Article 3, General Regulations, is hereby amended by the addition of the following paragraphs:

Paragraph 9. Common carriers shall not, under authority of paragraph 8, accept for transportation nor transport in interstate traffic any person suffering from or afflicted with leprosy unless there has been obtained from the Surgeon General of the Public Health and Marine-Hospital Service or his accredited representative a permit stating that said person may be received under such restrictions as will prevent the spread of the disease, and said restrictions shall be specified in each instance: *Provided*, That, in addition to the above, permits shall also be obtained from the health authorities of the States, Territories, or districts to and from which the patient intends to travel.

Paragraph 10. No person knowing or having reason to believe that he is a leper shall accept transportation nor engage in travel in interstate traffic unless permits have been obtained, as set forth in the preceding section, and unless said person shall have agreed in writing to comply with the restrictions as specified in the permits mentioned above.

Paragraph 11. Any person who presents symptoms of leprosy and who is traveling or who has left the State where he resides, in violation of the above regulations, shall be detained, and if proven to be a leper shall be returned to such State or removed to such Federal quarantine station as the Secretary of the Treasury may designate and the proper health authorities notified.

Paragraph 12. Compartments or places in cars, vessels, or conveyances operated in interstate traffic and that have been occupied by persons afflicted with leprosy shall be immediately closed after being vacated by the patient and so kept until after proper disinfection.

J. F. CURTIS, *Acting Secretary.*

METHODS AND STANDARDS FOR THE PRODUCTION AND DISTRIBUTION OF "CERTIFIED MILK."[1]

Certified milk is the product of dairies operated in accordance with accepted rules and regulations formulated by authorized medical milk commissions to insure its purity and adaptability for infants and invalids.

The need for such a milk was experienced primarily by those engaged in the conservation of the life and health of infants. As a result there was formulated in 1892 a plan whereby certified milk would be produced by a dairyman under the control of a medical milk commission designated by a representative medical society.

The first rules designed for this purpose were those contained in an agreement entered into by a medical milk commission and the dairyman concerned.[2]

The rules contained in the original agreement mentioned represented the essential requirements for the production of certified milk. Following this precedent, other commissions were organized, which, in 1906, became federated into a national association known as the American Association of Medical Milk Commissions.

A fundamental object of this association was to bring about the uniformity of standards and their perfection. This result has been reached by the adoption from time to time of definite standards relating to the veterinary inspection of herds and farms, the medical inspection of employees handling the milk, and the bacteriological and chemical examinations as to quality and purity. The requirements with respect to these four topics have been previously reported upon by committees and adopted by the association, and at its last annual meeting provision was made for their further revision and amplification.

ORGANIZATION OF MEDICAL MILK COMMISSIONS.

The medical milk commission is appointed by a representative medical society, and acts under its auspices and for it, to encourage the production of milk of the highest possible standards of purity. No commission should be considered as certifying milk that does not conform to the standards adopted from time to time by the Association of Medical Milk Commissions. The commission should include at least five members or a number sufficient to become responsible for and to carry on the following divisions of work: (*a*) The hygiene of the dairy, as it relates to the production and distribution of the milk; (*b*) the veterinary supervision of the herd; (*c*) the medical supervision of the employees; (*d*) the chemical and bacteriological examinations of the milk.

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[1] At the fifth annual meeting of the American Association of Medical Milk Commissions, held in Philadelphia May 25, 1911, a committee was appointed to revise the manual of working methods and standards for the guidance of medical milk commissions in the supervision of the production and distribution of certified milk. The committee consisted of Dr. J. W. Kerr (chairman), Dr. S. McC. Hamill, and Dr. Henry L. Coit. This their report was adopted at the sixth annual meeting, held at Louisville, Ky., May 1, 1912, as the working methods and standards of the association. The association recommends them to component commissions as ideal and to be as closely approximated as possible. The report includes a statement concerning the certified-milk movement, as well as the revised methods and standards, and is published for the information of those interested in the improvement of public milk supplies.

[2] Bul. 56, Hygienic Laboratory, Public Health and Marine-Hospital Service, p. 615.

DUTIES OF THE COMMISSION.

After its organization the commission should designate a veterinarian, a physician, a chemist, and a bacteriologist to enforce its methods and standards which shall be the prevailing methods and standards of the American Association of Medical Milk Commissions, and these officers should be required to render regular reports of their inspections and examinations. A uniform written agreement should then be entered into with any dairyman who is desirous of undertaking the production of certified milk and the investigation of whose plant shows it to be properly equipped for such purpose. Such agreement shall require the observance of the methods and standards hereinafter mentioned.

Upon receipt of favorable reports from the several experts and committees which have made the investigations, the dairyman should be authorized, in accordance with the terms of the agreement, to employ the term "certified milk," and he shall be required to attach to all containers of any character used in distributing the milk produced under the agreement a certificate or seal bearing the term "certified milk," the name of the medical milk commission certifying it, and the day or date of production of the milk contained therein.

HYGIENE OF THE DAIRY.

UNDER THE SUPERVISION AND CONTROL OF THE VETERINARIAN.

1. *Pastures or paddocks.*—Pastures or paddocks to which the cows have access shall be free from marshes or stagnant pools, crossed by no stream which might become dangerously contaminated, at sufficient distances from offensive conditions to suffer no bad effects from them, and shall be free from plants which affect the milk deleteriously.

2. *Surroundings of buildings.*—The surroundings of all buildings shall be kept clean and free from accumulations of dirt, rubbish, decayed vegetable or animal matter or animal waste, and the stable yard shall be well drained.

3. *Location of buildings.*—Buildings in which certified milk is produced and handled shall be so located as to insure proper shelter and good drainage, and at sufficient distance from other buildings, dusty roads, cultivated and dusty fields, and all other possible sources of contamination; provided, in the case of unavoidable proximity to dusty roads or fields, the exposed side shall be screened with cheese cloth.

4. *Construction of stables.*—The stables shall be constructed so as to facilitate the prompt and easy removal of waste products. The floors and platforms shall be made of cement or other nonabsorbent material, and the gutters of cement only. The floors shall be properly graded and drained, and the manure gutters shall be from 6 to 8 inches deep and so placed in relation to the platform that all manure will drop into them.

5. The inside surface of the walls and all interior construction shall be smooth, with tight joints, and shall be capable of shedding water. The ceiling shall be of smooth material and dust-tight. All horizontal and slanting surfaces which might harbor dust shall be avoided.

6. *Drinking and feed troughs.*—Drinking troughs or basins shall be drained and cleaned each day, and feed troughs and mixing floors shall be kept in a clean and sanitary condition.

7. *Stanchions.*—Stanchions when used shall be constructed of iron pipes or hardwood, and throat latches shall be provided to prevent the cows from lying down between the time of cleaning and the time of milking.

8. *Ventilation.*—The cow stables shall be provided with adequate ventilation either by means of some approved artificial device, or by the substitution of cheesecloth for glass in the windows, each cow to be provided with a minimum of 600 cubic feet of air space.

9. *Windows.*—A sufficient number of windows shall be installed and so distributed as to provide satisfactory light and a maximum of sunshine; 2 feet square of window area to each 600 cubic feet of air space to represent the minimum. The coverings of such windows shall be kept free from dust and dirt.

10. *Exclusion of flies, etc.*—All necessary measures should be taken to prevent the entrance of flies and other insects, and rats and other vermin into all the buildings.

11. *Exclusion of animals from the herd.*—No horses, hogs, dogs, or other animals or fowls shall be allowed to come in contact with the certified herd either in the stables or elsewhere.

12. *Bedding.*—No dusty or moldy hay or straw, bedding from horse stalls, or other unclean materials shall be used for bedding the cows. Only bedding which is clean, dry, and absorbent may be used, preferably shavings or straw.

13. *Cleaning stable and disposal of manure.*—Soiled bedding and manure shall be removed at least twice daily, and the floors shall be swept and kept free from refuse. Such cleaning shall be done at least one hour before the milking time. Manure, when removed, shall be drawn to the field or temporarily stored in containers so screened as to exclude flies. Manure shall not be even temporarily stored within 300 feet of the barn or dairy building.

14. *Cleaning of cows.*—Each cow in the herd shall be groomed daily, and no manure, mud, or filth shall be allowed to remain upon her during milking; for cleaning, a vacuum apparatus is recommended.

15. *Clipping.*—Long hairs shall be clipped from the udder and flanks of the cow, and from the tail above the brush. The hair on the tail shall be cut so that the brush may be well above the ground.

16. *Cleaning of udders.*—The udders and teats of the cow shall be cleaned before milking; they shall be washed with a cloth and water, and dry wiped with another clean sterilized cloth—a separate cloth for drying each cow.

17. *Feeding.*—All foodstuffs shall be kept in an apartment separate from and not directly communicating with the cow barn. They shall be brought into the barn only immediately before the feeding hour, which shall follow the milking.

18. Only those foods shall be used which consist of fresh, palatable, or nutritious materials, such as will not injure the health of the cows

or unfavorably affect the taste or character of the milk. Any dirty or moldy food or food in a state of decomposition or putrefaction shall not be given.

19. A well-balanced ration shall be used, and all changes of food shall be made slowly. The first few feedings of grass, alfalfa, ensilage, green corn, or other green feeds shall be given in small rations and increased gradually to full ration.

20. *Exercise.*—All dairy cows shall be turned out for exercise at least 2 hours in each 24 in suitable weather. Exercise yards shall be kept free from manure and other filth.

21. *Washing of hands.*—Conveniently located facilities shall be provided for the milkers to wash in before and during milking.

22. The hands of the milkers shall be thoroughly washed with soap, water, and brush and carefully dried on a clean towel immediately before milking. The hands of the milkers shall be rinsed with clean water and carefully dried before milking each cow. The practice of moistening the hands with milk is forbidden.

23. *Milking clothes.*—Clean overalls, jumper, and cap shall be worn during milking. They shall be washed or sterilized each day and used for no other purpose, and when not in use they shall be kept in a clean place, protected from dust and dirt.

24. *Things to be avoided by milkers.*—While engaged about the dairy or in handling the milk employees shall not use tobacco nor intoxicating liquors. They shall keep their fingers away from their nose and mouth, and no milker shall permit his hands, fingers, lips, or tongue to come in contact with milk intended for sale.

25. During milking the milkers shall be careful not to touch anything but the clean top of the milking stool, the milk pail, and the cow's teats.

26. Milkers are forbidden to spit upon the walls or floors of stables, or upon the walls or floors of milk houses, or into the water used for cooling the milk or washing the utensils.

27. *Fore milk.*—The first streams from each teat shall be rejected, as this fore milk contains large numbers of bacteria. Such milk shall be collected into a separate vessel and not milked onto the floors or into the gutters. The milking shall be done rapidly and quietly, and the cows shall be treated kindly.

28. *Milk and calving period.*—Milk from all cows shall be excluded for a period of 45 days before and 7 days after parturition.

29. *Bloody and stringy milk.*—If milk from any cow is bloody and stringy or of unnatural appearance, the milk from that cow shall be rejected and the cow isolated from the herd until the cause of such abnormal appearance has been determined and removed, special attention being given in the meantime to the feeding or to possible injuries. If dirt gets into the pail, the milk shall be discarded and the pail washed before it is used.

30. *Make-up of herd.*—No cows except those receiving the same supervision and care as the certified herd shall be kept in the same barn or brought in contact with them.

31. *Employees other than milkers.*—The requirements for milkers, relative to garments and cleaning of hands, shall apply to all other persons handling the milk, and children unattended by adults shall not be allowed in the dairy nor in the stable during milking.

32. *Straining and strainers.*—Promptly after the milk is drawn it shall be removed from the stable to a clean room and then emptied from the milk pail to the can, being strained through strainers made of a double layer of finely meshed cheese cloth or absorbent cotton thoroughly sterilized. Several strainers shall be provided for each milking in order that they may be frequently changed.

33. *Dairy building.*—A dairy building shall be provided which shall be located at a distance from the stable and dwelling prescribed by the local commission, and there shall be no hogpen, privy, or manure pile at a higher level or within 300 feet of it.

34. The dairy building shall be kept clean and shall not be used for purposes other than the handling and storing of milk and milk utensils. It shall be provided with light and ventilation, and the floors shall be graded and water-tight.

35. The dairy building shall be well lighted and screened and drained through well-trapped pipes. No animals shall be allowed therein. No part of the dairy building shall be used for dwelling or lodging purposes, and the bottling room shall be used for no other purpose than to provide a place for clean milk utensils and for handling the milk. During bottling this room shall be entered only by persons employed therein. The bottling room shall be kept scrupulously clean and free from odors.

36. *Temperature of milk.*—Proper cooling to reduce the temperature to 45° F. shall be used, and aerators shall be so situated that they can be protected from flies, dust, and odors. The milk shall be cooled immediately after being milked, and maintained at a temperature between 35° and 45° F. until delivered to the consumer.

37. *Sealing of bottles.*—Milk, after being cooled and bottled, shall be immediately sealed in a manner satisfactory to the commission, but such seal shall include a sterile hood which completely covers the lip of the bottle.

38. *Cleaning and sterilizing of bottles.*—The dairy building shall be provided with approved apparatus for the cleansing and sterilizing of all bottles and utensils used in milk production. All bottles and utensils shall be thoroughly cleaned by hot water and sal soda, or equally pure agent, rinsed until the cleaning water is thoroughly removed, then exposed to live steam or boiling water at least 20 minutes, and then kept inverted until used, in a place free from dust and other contaminating materials.

39. *Utensils.*—All utensils shall be so constructed as to be easily cleaned. The milk pail should preferably have an elliptical opening 5 by 7 inches in diameter. The cover of this pail should be so convex as to make the entire interior of the pail visible and accessible for cleaning. The pail shall be made of heavy seamless tin, and with seams which are flushed and made smooth by solder. Wooden pails, galvanized-iron pails, or pails made of rough, porous materials, are forbidden. All utensils used in milking shall be kept in good repair.

40. *Water supply.*—The entire water supply shall be absolutely free from contamination, and shall be sufficient for all dairy purposes. It shall be protected against flood or surface drainage, and shall be conveniently situated in relation to the milk house.

41. *Privies, etc., in relation to water supply.*—Privies, pigpens, manure piles, and all other possible sources of contamination shall be so situated on the farm as to render impossible the contamination of the

water supply, and shall be so protected by use of screens and other measures as to prevent their becoming breeding grounds for flies.

42. *Toilet rooms.*—Toilet facilities for the milkers shall be provided and located outside of the stable or milk house. These toilets shall be properly screened, shall be kept clean, and shall be accessible to wash basins, water, nail brush, soap and towels, and the milkers shall be required to wash and dry their hands immediately after leaving the toilet room.

TRANSPORTATION.

43. In transit the milk packages shall be kept free from dust and dirt. The wagon, trays, and crates shall be kept scrupulously clean. No bottles shall be collected from houses in which communicable diseases prevail, unless a separate wagon is used and under conditions prescribed by the department of health and the medical milk commission.

44. All certified milk shall reach the consumer within 36 hours after milking.

VETERINARY SUPERVISION OF THE HERD.

45. *Tuberculin test.*—The herd shall be free from tuberculosis, as shown by the proper application of the tuberculin test. The test shall be applied in accordance with the rules and regulations of the United States Government, and all reactors shall be removed immediately from the farm.

46. No new animals shall be admitted to the herd without first having passed a satisfactory tuberculin test, made in accordance with the rules and regulations mentioned; the tuberculin to be obtained and applied only by the official veterinarian of the commission.

47. Immediately following the application of the tuberculin test to a herd for the purpose of eliminating tuberculous cattle, the cow stable and exercising yards shall be disinfected by the veterinary inspector in accordance with the rules and regulations of the United States Government.

48. A second tuberculin test shall follow each primary test after an interval of six months, and shall be applied in accordance with the rules and regulations mentioned. Thereafter, tuberculin tests shall be reapplied annually, but it is recommended that the retests be applied semiannually.

49. *Identification of cows.*—Each dairy cow in each of the certified herds shall be labeled or tagged with a number or mark which will permanently identify her.

50. *Herd-book record.*—Each cow in the herd shall be registered in a herd book, which register shall be accurately kept so that her entrance and departure from the herd and her tuberculin testing can be identified.

51. A copy of this herd-book record shall be kept in the hands of the veterinarian of the medical milk commission under which the dairy farm is operating, and the veterinarian shall be made responsible for the accuracy of this record.

52. *Dates of tuberculin tests.*—The dates of the annual tuberculin tests shall be definitely arranged by the medical milk commission, and all of the results of such tests shall be recorded by the veterinarian

and regularly reported to the secretary of the medical milk commission issuing the certificate.

53. The results of all tuberculin tests shall be kept on file by each medical milk commission, and a copy of all such tests shall be made available to the American Association of Medical Milk Commissions for statistical purposes.

54. The proper designated officers of the American Association of Medical Milk Commissions should receive copies of reports of all of the annual, semiannual, and other official tuberculin tests which are made and keep copies of the same on file and compile them annually for the use of the association.

55. *Disposition of cows sick with diseases other than tuberculosis.*—Cows having rheumatism, leukorrhea, inflammation of the uterus, severe diarrhea, or disease of the udder, or cows that from any other cause may be a menace to the herd, shall be removed from the herd, placed in a building separate from that which may be used for the isolation of cows with tuberculosis, unless such building has been properly disinfected since it was last used for this purpose. The milk from such cows shall not be used, nor shall the cows be restored to the herd until permission has been given by the veterinary inspector after a careful physical examination.

56. *Notification of veterinary inspector.*—In the event of the occurrence of any of the diseases just described between the visits of the veterinary inspector, or if at any time a number of cows become sick at one time in such a way as to suggest the outbreak of a contagious disease or poisoning, it shall be the duty of the dairyman to withdraw such sickened cattle from the herd, to destroy their milk, and to notify the veterinary inspector by telegraph or telephone immediately.

57. *Emaciated cows.*—Cows that are emaciated from chronic diseases or from any cause that in the opinion of the veterinary inspector may endanger the quality of the milk, shall be removed from the herd.

BACTERIOLOGICAL STANDARDS.

58. *Bacterial counts.*—Certified milk shall contain less than 10,000 bacteria per cubic centimeter when delivered. In case a count exceeding 10 000 bacteria per cubic centimeter is found, daily counts shall be made, and if normal counts are not restored within 10 days the certificate shall be suspended.

59. Bacterial counts shall be made at least once a week.

60. *Collection of samples.*—The samples to be examined shall be obtained from milk as offered for sale and shall be taken by a representative of the milk commission. The samples shall be received in the original packages, in properly iced containers, and they shall be so kept until examined, so as to limit as far as possible changes in their bacterial content.

61. For the purpose of ascertaining the temperature, a separate original package shall be used, and the temperature taken at the time of collecting the sample, using for the purpose a standardized thermometer graduated in the centigrade scale.

62. *Interval between milking and plating.*—The examinations shall be made as soon after collection of the samples as possible, and in no case shall the interval between milking and plating the samples be longer than 40 hours.

63. *Plating.*—The packages shall be opened with aseptic precautions after the milk has been thoroughly mixed by vigorously reversing and shaking the container 25 times.

64. Two plates at least shall be made for each sample of milk, and there shall also be made a control of each lot of medium and apparatus used at each testing. The plates shall be grown at 37° C. for 48 hours.

65. In making the plates there shall be used agaragar media containing 1.5 per cent agar and giving a reaction of 1.0 to phenolphthalein.

The following is the method recommended by a committee of the American Public Health Association for the making of the media, modified, however, as to the agar content and reaction to conform to the requirements specified in section 65:

1. Boil 15 grams of thread agar in 500 c. c. of water for half an hour and make up weight to 500 g. or digest for 10 minutes in the autoclave at 110° C. Let this cool to about 60° C.
2. Infuse 500 g. finely chopped lean beef for 24 hours with its own weight of distilled water in the refrigerator.
3. Make up any loss by evaporation.
4. Strain infusion through cotton flannel, using pressure.
5. Weigh filtered infusion.
6. Add Witte's peptone, 2 per cent.
7. Warm on water bath, stirring until peptone is dissolved and not allowing temperature to rise above 60° C.
8. To the 500 grams of meat infusion (with peptone) add 500 g. of the 2 per cent agar, keeping the temperature below 60° C.
9. Heat over boiling water (or steam) bath 30 minutes.
10. Restore weight lost by evaporation.
11. Titrate after boiling one minute to expel carbonic acid.
12. Adjust reaction to final point desired +1 by adding normal sodium hydrate.
13. Boil two minutes over free flame, constantly stirring.
14. Restore weight lost by evaporation.
15. Filter through absorbent cotton or coarse filter paper, passing the filtrate through the filter repeatedly until clear.
16. Titrate and record the final reaction.
17. Tube (10 c. c. to a tube) and sterilize in autoclave one hour at 15 pounds pressure or in the streaming steam for 20 minutes on three successive days.

66. Samples of milk for plating shall be diluted in the proportion of 1 part of milk to 99 parts of sterile water; shake 25 times and plate 1 c. c. of the dilution.

The committee on bacterial milk analyses of the American Public Health Association in Part IV of its report presented details with respect to plating apparatus and technique in part as follows:

Plating apparatus.—For plating it is best to have a water bath in which to melt the media and a water-jacketed water bath for keeping it at the required temperature; a wire rack which should fit both the water baths for holding the media tubes; a thermometer for recording the temperature of the water in the water-jacketed bath, sterile 1 c. c. pipettes, sterile Petri dishes, and sterile dilution water in measured quantities.

Dilutions.—Ordinary potable water, sterilized, may be used for dilutions. Occasionally spore forms are found in such water which resist ordinary autoclave sterilization; in such cases distilled water may be used or the autoclave pressure increased. With dilution water in 8-ounce bottles calibrated for 99 cubic centimeters * * * all the necessary dilutions may be made.

Short, wide-mouthed "blakes" or wide-mouthed French square bottles are more easily handled and more economical of space than other forms of bottles or flasks.

Eight-ounce bottles are the best, as the required amount of dilution water only about half fills them, leaving room for shaking. Long-fiber nonabsorbent cotton should be used for plugs. It is well to use care in selecting cotton for this purpose to avoid short-fiber or dusty cotton, which give a cloud of lint-like particles on shaking. Bottles * * * should be filled a little over the 99 c. c. * * * to allow for loss during sterilization.

Pipettes.—Straight sides 1 c. c. pipettes are more easily handled than those with bulbs; they may be made from ordinary three-sixteenths inch glass tubing and should be about 10 inches in length.

Plating technique.—The agar after melting should be kept in the water-jacketed water bath between 40° C. and 45° C. for at least 15 minutes before using to make sure that the agar itself has reached the temperature of the surrounding water. If used too warm, the heat may destroy some of the bacteria or retard their growth.

Shake the milk sample 25 times, then with a sterile pipette transfer 1 c. c. to the first dilution water and rinse the pipette by drawing dilution water to the mark and expelling; this gives a dilution 1 to 100.

* * * Then with a sterile pipette transfer 1 c. c. to the Petri dish, using care to raise the cover only as far as necessary to insert the end of the pipette.

Take the tube of agar from the water bath, wipe the water from outside the tube with a piece of cloth, remove the plug, pass the mouth of the tube through a flame, and pour the agar into the plate, using the same care as before to avoid exposure of the plate contents to the air.

Carefully and thoroughly mix the agar and diluted milk in the Petri dish by a rotary motion, avoiding the formation of air bubbles or slopping the agar, and after allowing the agar to harden for at least 15 minutes at room temperature, place the dish bottom down in the incubator.

Plating should always be done in a place free from dust or currents of air.

In order that colonies may have sufficient food for proper development 10 c. c. of agar shall be used for each plate.

67. *Determination of taste and odor of milk.*—After the plates have been prepared and placed in the incubator, the taste and odor of the milk shall be determined after warming the milk to 100° F.[1]

68. *Counts.*—The total number of colonies on each plate should be counted, and the results expressed in multiples of the dilution factor. Colonies too small to be seen with the naked eye or with slight magnification shall not be considered in the count.

69. *Records of bacteriologic tests.*—The results of all bacterial tests shall be kept on file by the secretary of each commission, copies of which should be made available annually for the use of the American Association of Medical Milk Commissions.

CHEMICAL STANDARDS AND METHODS.

The methods that must be followed in carrying out the chemical investigations essential to the protection of certified milk are so complicated that in order to keep the fees of the chemist at a reasonable figure, there must be eliminated from the examination those procedures which, whilst they might be helpful and interesting, are in no sense necessary.

For this reason the determination of the water, the total solids and the milk sugar is not required as a part of the routine examination.

70. The chemical anaylses shall be made by a competent chemist designated by the medical milk commission.

71. *Method of obtaining samples.*—The samples to be examined by the chemist shall have been examined previously by the bacteriologist designated by the medical milk commission, as to temperature, odor, taste, and bacterial content.

72. *Fat standards.*—The fat standard for certified milk shall be 4 per cent, with a permissible range of variation of from 3.5 to 4.5 per cent.

73. The fat standard for certified cream shall be not less than 18 per cent.

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[1] Should it be deemed desirable and necessary to conduct tests for sediment, the presence of special bacteria, or the number of leucocytes the methods adopted by the committee of the American Public Health Association should be followed.

74. If it is desired to sell higher fat-percentage milks or creams as certified milks or creams, the range of variation for such milks shall be 0.5 per cent on either side of the advertised percentage and the range of variations for such creams shall be 2 per cent on either side of the advertised percentage.

75. The fat content of certified milks and creams shall be determined at least once each month.

76. The methods recommended for this purpose are the Babcock (*a*), the Leffmann-Beam (*b*), and the Gerber (*c*).

(*a*) *Babcock test.*—The Babcock test is based on the fact that strong sulphuric acid will dissolve the nonfatty solid constituents of milk, and thus enable the fat to separate on standing. It can be conducted by any of the Babcock outfits which are purchasable in the market.

"The test is made by placing in the special test bottle 18 grams (17.6 c. c.) of milk To this is added, from a pipette, burette, or measuring bottle, 17.5 c. c. commercial sulphuric acid of a specific gravity of 1.82 to 1.83. The contents of the bottle are carefully and thoroughly mixed by a rotary motion. The mixture becomes brown and heat is generated. The test bottle is now placed in a properly balanced centrifuge and whirled for 5 minutes at a speed of from 800 to 1,200 revolutions per minute. Hot water is then added to fill the bottle to the lower part of the neck, after which it is again whirled for two minutes. Now, enough hot water is added to float the column of fat into the graduated portion of the neck of the bottle, and the whirling is repeated for a minute. The amount of fat is read while the neck of the bottle is still hot. The reading is from the upper limits of the meniscus. A pair of calipers is of assistance in measuring the column of fat." (Jensen's Milk Hygiene, Leonard Pearson's translation.)

(*b*) *Leffmann-Beam test.*—The distinctive feature is the use of fusel oil, the effect of which is to produce a greater difference in surface tension between the fat and the liquid in which it is suspended, and thus promote its readier separation. This effect has been found to be heightened by the presence of a small amount of hydrochloric acid.

The test bottles have a capacity of about 30 c. c. and are provided with a graduated neck, each division of which represents 9.1 per cent by weight of butter fat.

Fifteen centimeters of the milk are measured into the bottle, 3 c. c. of a mixture of equal parts of amylalcohol and strong hydrochloric acid added and mixed. Then 9 c. c. of concentrated sulphuric acid is added in portions of about 1 c. c.; after each addition the liquids are mixed by giving the bottle a gyratory motion. If the fluid has not lost all of its milky color by this treatment, a little more concentrated acid must be added. The neck of the bottle is now immediately filled at about the zero point with one part sulphuric acid and two parts water, well mixed just before using Both the liquid in the bottle and the diluted acid must be hot. The bottle is then placed at once in the centrifugal machine; after rotation from one to two minutes the fat will collect in the neck of the bottle and the percentage may be read off.

(c) *Gerber's test.*—This test is applied as follows: The test bottles are put into the stand with the mouths uppermost; then, with the pipette designed for the purpose, or with an automatic measurer, 10 c. c. of sulphuric acid are filled into the test bottle care being taken not to allow any to come in contact with the neck. The few drops remaining in the tip of the pipette should not be blown out. Then 11 c. c. of milk are measured with the proper pipette and allowed to flow slowly onto the acid, so that the two liquids mix as little as possible. Finally, the amyl alcohol is added. (It is important to use the reagents in the proper order, which is—sulphuric acid, milk, amyl alcohol. If the sulphuric acid is followed by amyl alcohol and the milk last then the result is sometimes incorrect.) A rubber stopper, which must not be damaged, is then fitted into the mouth of the test bottle, and the contents are well shaken, the thumb being kept on the stopper to prevent it coming out. As a considerable amount of heat is generated by the action of the sulphuric acid on the milk, the test bottle should be wrapped in a cloth.

The shaking of the sample must be done thoroughly and quickly, and the test bottle inverted several times, so that the liquid in the neck becomes thoroughly mixed. By pressing in the rubber stopper the height of the liquid can be brought to about the zero point on the scale.

If only a few samples have to be analyzed and the room is warm, the test bottles can be put into the centrifuge without any preliminary heating, otherwise the test bottles must be warmed for a few minutes (not longer) in the water bath at a temperature of 60° to 65° C. When the temperature rises higher than this, say above 70° C., the rubber stopper is liable to be blown out of the test bottle. After the test bottles have been heated they are arranged symmetrically in the centrifuge and whirled for 3 to 4 minutes at a speed of about 1,000 revolutions per minute. When the centrifuge has a heating arrangement attached to it, the preliminary warming is not, of course, necessary. When the test bottles are taken out of the centrifuge, they are again placed in the water bath at a temperature of 60° to 65° C., and left there for several minutes before being read; where the centrifuge is heated, the tubes can be read off as taken from the centrifuge.

By carefully screwing in the rubber stopper, or even by pressing it, the lower limit of the fat column is brought onto one of the main divisions of the scale, and then, by holding the test bottle against the light the height of the column of fat can be accurately ascertained. The lowest point of the meniscus is taken as the level when reading the upper surface of the fat in a sample of whole milk, and the middle of the meniscus for separated milk.

If the column of fat is not clear and sharply defined, the sample must be again whirled in the centrifuge.

Each division on the scale is equivalent to 0.1 per cent, so it is very easy to read to 0.05 per cent, or, with a lens, to 0.025 per cent. If the number which is read off is multiplied by 0.1, then the percentage quantity of fat in the milk is obtained; e. g., if the number on the scale was 36.5, then the percentage of fat is 3.65. (Milk and Dairy Products, Barthel; translated by Goodwin, p. 71.)

77. Before condemning samples of milk which have fallen outside the limits allowed, the chemist shall have determined, by control ether extractions, that his apparatus and his technique are reliable.

78. *Protein standard.*—The protein standard for certified milk shall be 3.50 per cent with a permissible range of variation of from 3 to 4 per cent.

79. The protein standard for certified cream shall correspond to the protein standard for certified milk.

80. The protein content shall be determined only when any special consideration seems to the medical milk commission to make it desirable.

81. It shall be determined by the Kjeldahl method, using the Gunning or some other reliable modification, and employing the factor 6.25 in reckoning the protein from the nitrogen.

Kjeldahl method.—Five cubic centimeters of milk are measured carefully into a flat-bottom 800 c. c. Jena flask, 20 c. c. of concentrated sulphuric acid (C. P.; sp. gr., 1.84) are added, and 0.7 gram of mercuric oxid (or its equivalent in metallic mercury); the mixture is then heated over direct flame until it is straw-colored or perfectly white; a few crystals of potassium permanganate are now added till the color of the liquid remains green. All the nitrogen in the milk has then been converted into the form of ammonium sulphate. After cooling, 200 c. c. of ammonia-free distilled water are added, 20 c. c. of a solution of potassium sulphide (containing 40 grams sulphide per liter), and a fraction of a gram of powdered zinc. A quantity of semi-normal HCl solution more than sufficient to neutralize the ammonia obtained in the oxidation of the milk is now carefully measured out from a delicate burette (divided into $\frac{1}{20}$ c. c.) into an Erlenmeyer flask and the flask connected with a distillation apparatus. At the other end the Jena flask containing the watery solution of the ammonium sulphate is connected, after adding 50 c. c. of a concentrated soda solution (1 pound "pure potash" dissolved in 500 c. c. of distilled water and allowed to settle); the contents of the Jena flask are now heated to boiling, and the distillation is continued for 40 minutes to an hour, until all ammonia has been distilled over.

The excess of acid in the Erlenmeyer receiving flask is then accurately titrated back by means of a tenth-normal standard ammonia solution, using a cochineal solution as an indicator. From the amount of acid used the per cent of nitrogen is obtained; and from it the per cent of casein and albumen in the milk by multiplying by 6.25. The amount of nitrogen contained in the chemicals used is determined by blank experiments and deducted from the nitrogen obtained as described. (Farrington and Woll, Testing Milk and Its Products, p. 221.)

82. *Coloring matter and preservatives.*—All certified milks and creams shall be free from adulteration, and coloring matter and preservatives shall not be added thereto.

83. Tests for the detection of added coloring matter shall be applied whenever the color of the milk or cream is such as to arouse suspicion.

Test for coloring matter.—The presence of foreign coloring matter in milk is easily shown by shaking 10 c. c. of the milk with an equal quantity of ether; on standing, a clear ether solution will rise to the surface; if artificial coloring matter has been added to the milk, the solution will be yellow colored, the intensity of the color indicating the quantity added; natural fresh milk will give a colorless ether solution. (Testing Milk and its Products, Farrington and Woll, p. 244.)

84. Tests for the detection of formaldehyde, borax, and boracic acid shall be applied at least once each month. Occasionally application of tests for the detection of salicylic acid, benzoic acid, and the benzoates are also recommended.

Test for the detection of formaldehyde.—Five cubic centimeters of milk is measured into a white porcelain dish, and a similar quantity of water added; 10 c. c. of HCl, containing a trace of Fe_2Cl_6 is added, and the mixture is heated very slowly. If formaldehyde is present, a violet color will be formed. (Testing Milk and Its Products, Farrington and Woll, p. 249.)

Test for boracic acid (borax, borates, preservaline, etc.). One hundred cubic centimenters of milk are made alkaline with a soda or potash solution, and then evaporated to dryness and incinerated. The ash is dissolved in water, to which a little hydrochloric acid has been added, and the solution filtered. A strip of turmeric paper moistened with the filtrate will be colored reddish brown when dried at 100° C. on a watch glass, if boracic acid is present.

If a little alcohol is poured over the ash to which concentrated sulphuric acid has been added, and fire is set to the alcohol, after a little while this will burn with a yellowish-green tint, especially noticeable if the ash is stirred with a glass rod and when the flame is about to go out.—(Testing Milk and Its Products, Farrington and Woll, p. 247.)

Test for salicylic acid (salicylates, etc.)—Twenty cubic centimenters of milk are acidulated with sulphuric acid and shaken with ether; the ether solution is evaporated, and the residue treated with alcohol and a little iron-chlorid solution; a deep violet color will be obtained in the presence of salicylic acid.—(Testing Milk and Its Products, Farrington and Woll, p. 248.)

Test for benzoic acid.—Two hundred and fifty to five hundred cubic centimeters of milk are made alkaline with a few drops of lime or baryta water, and then evaporated to about a quarter of the bulk. Powdered gypsum is stirred into the remaining liquid until a paste is formed, which is then dried on the water bath. The gypsum only serves to hasten the drying, and powdered pumice stone or sand can be used equally well. When the mass is dry, it is finely powdered and moistened with dilute sulphuric acid and shaken out three or four times with about twice the volume of 50 per cent alcohol, in which benzoic acid is easily soluble in the cold, the fat only being dissolved to a very slight extent or not at all. The acid alcoholic liquid from the various extractions, which contains milk sugar and inorganic salts in addition to the benzoic acid, is neutralized with baryta water and evaporated to a small bulk. Dilute sulphuric acid is again added, and the liquid shaken out with small quantities of ether. On evaporation of the ether, the benzoic acid is left behind in almost pure state, the only impurities being small quantities of fat or ash.

The benzoic acid which is obtained is dissolved in a small quantity of warm water, a drop of sodium acetate and neutral ferric chloride added, and the red precipitate of benzoate of iron indicates the presence of the acid. (Milk and Dairy Products, Barthel, translated by Goodwin, p. 121.)

85. *Detection of heated milk.*—Certified milk or cream shall not be subjected to heat unless specially directed by the commission to meet emergencies.

86. Tests to determine whether such milks and creams have been subjected to heat shall be applied at least once each month.

Detection of heated milk—Storch's method.—Five cubic centimeters of milk are poured into a test tube; a drop of weak solution of hydrogen dioxide (about 0.2 per cent) which contains about 0.1 per cent sulphuric acid, is added, and two drops of a 2 per cent solution of paraphenylendiamin (solution should be renewed quite often), then the fluid is shaken. If the milk or the cream becomes, at once, indigo blue, or the whey violet or reddish brown, then this has not been heated or, at all events, it has not been heated higher than 78° C. (172.5° F.); if the milk becomes a light bluish gray immediately or in the course of half a minute, then it has been heated to 79° to 80° C. (174.2° to 176° F.) If the color remains white, the milk has been heated at least to 80° C. (176° F.). In the examination of sour milk or sour buttermilk, lime water must be added, as the color reaction is not shown in acid solution.

Arnold's guaiac method.—A little milk is poured into a test tube and a little tincture of guaiac is added, drop by drop. If the milk has not been heated to 80° C. (176° F.) a blue zone is formed between the two fluids: heated milk gives no reaction, but remains white. The guaiac tincture should not be used perfectly fresh, but should have stood a few days and its potency have been determined. Thereafter it can be used indefinitely. These tests for heated milk are only active in the case of milks which have been heated to 176° F. or 80° C. (Jensen's Milk Hygiene, Pearson's translation, p. 192.)

Microscopic test for heated (pasteurized) milk—Frost and Ravenel.—About 15 c. c. of milk are centrifuged for five minutes, or long enough to throw down the leucocytes. The cream layer is then completely removed with absorbent cotton and the milk drawn off with a pipette, or a fine-pointed tube attached to a Chapman air pump. Only about 2 mm. of milk are left above the sediment which is in the bottom of the sedimentation tube.

The stain, which is an aqueous solution of safranin 0, soluble in water, is then added very slowly from an opsonizing pipette. The important thing is to mix stain and milk so slowly that clotting does not take place. The stain is added until a deep opaque rose color is obtained. After standing three minutes, by means of the opsonizing pipette, which has been washed out in hot water, the stained sediment is then transferred to slides. A small drop is placed at the end of each of several slides and spread by means of a glass spreader, as in Wright's method for opsonic index determinations.

In an unheated milk the polymorphonuclear leucocytes have their protoplasm slightly tinged or are unstained.

In heated milk the polymorphonuclear leucocytes have their nuclei stained. In milk heated to 63° C. or above, practically all of the leucocytes have their nuclei definitely stained. When milk is heated at a lower temperature the nuclei are not all stained above 60° C. The majority, however, are stained.

87. *Specific gravity.*—The specific gravity of certified milk shall range from 1.029 to 1.034.

88. The specific gravity shall be determined at least each month.

The Quevenne lactodensimeter is recommended for the determination of the specific gravity. It is made like an ordinary aerometer and divided into degrees which correspond to a specific gravity from 1.014 to 1.040, or only from 1.022 to 1.038, since, by the latter division, a greater space is gained between the different degrees without unduly lengthening the instrument. From such a lactodensimeter one can easily read off four decimal places.

The milk the specific gravity of which is to be determined is well shaken and poured into a high glass cylinder of suitable diameter; the aerometer is dropped in slowly, in order to prevent its bobbing up and down. (The bulb should be free from adhering air bubbles.) The figures on the stem are the second and third decimals of the numbers of the specific gravity, so that 34 is to be read 1.034. For this examination, the temperature of the milk must be 15° C. (60° F.); if it is not, the specific gravity of the milk at 15° C. must be calculated from the specific gravity found and from the temperature, for in milk inspection and analysis this is the standard.

METHODS AND REGULATIONS FOR THE MEDICAL EXAMINATION OF EMPLOYEES, THEIR HEALTH AND PERSONAL HYGIENE.

89. A medical officer, known as the attending dairy physician, shall be selected by the commission who should reside near the dairy producing certified milk. He shall be a physician in good standing and authorized by law to practice medicine; he shall be responsible to the commission and subject to its direction. In case more than one dairy is under the control of the commission and they are in different localities, a separate physican should be designated for employment for the supervision of each dairy.

90. Before any person shall come on the premises to live and remain as an employee, such person, before being engaged in milking or the handling of milk, shall be subjected to a complete physical examination by the attending physician. No person shall be employed who has not been vaccinated recently or who upon examination is found to have a sore throat, or to be suffering from any form of tuberculosis, venereal disease, conjunctivitis, diarrhea, dysentery, or who has recently had typhoid fever or is proved to be a typhoid carrier, or who has any inflammatory disease of the respiratory tract, or any suppurative process or infectious skin eruption, or any disease of an infectious or contagious nature, or who has recently been associated with children sick with contagious disease.

91. In addition to ordinary habits of personal cleanliness all milkers shall have well-trimmed hair, wear close-fitting caps, and have clean-shaven faces.

92. When the milkers live upon the premises their dormitories shall be constructed and operated according to plans approved by the commission. A separate bed shall be provided for each milker and each bed shall be kept supplied with clean bedclothes. Proper bathing facilities shall be provided for all employees on the dairy premises, preferably a shower bath, and frequent bathing shall be enjoined.

93. In case the employees live on the dairy premises a suitable building shall be provided to be used for the isolation and quarantine of persons under suspicion of having a contagious disease.

The following plan of construction is recommended:

The quarantine building and hospital should be one story high and contain at least two rooms, each with a capacity of about 6,000 cubic feet and containing not more than three beds each, the rooms to be separated by a closed partition. The doors opening into the rooms should be on opposite sides of the building and provided with locks. The windows should be barred and the sash should be at least 5 feet from the ground and constructed for proper ventilation. The walls should be of a material which will allow proper disinfection. The floor should be of painted or washable wood, preferably of concrete, and so constructed that the floor may be flushed and properly disinfected. Proper heating, lighting, and ventilating facilities should be provided.

94. In the event of any illness of a suspicious nature the attending physician shall immediately quarantine the suspect, notify the health authorities and the secretary of the commission, and examine each member of the dairy force, and in every inflammatory affection of the nose or throat occurring among the employees of the dairy, in addition to carrying out the above-mentioned program, the attending physician shall take a culture and have it examined at once by a competent bacteriologist approved by the commission. Pending such examination, the affected employee or employees shall be quarantined.

95. It shall be the duty of the secretary, on receiving notice of any suspicious or contagious disease at the dairy, at once to notify the committee having in charge the medical supervision of employees of the dairy farm upon which such disease has developed. On receipt of the notice this committee shall assume charge of the matter, and shall have power to act for the commission as its judgment dictates. As soon as possible thereafter, the committee shall notify the commission, through its secretary, that a special meeting may be called for ultimate consideration and action.

96. When a case of contagious disease is found among the employees of a dairy producing certified milk under the control of a medical milk commission, such employee shall be at once quarantined and as soon as possible removed from the plant, and the premises fumigated.

When a case of contagion is found on a certified dairy it is advised that a printed notice of the facts shall be sent to every householder using the milk, giving in detail the precautions taken by the dairyman under the direction of the commission, and it is further advised that all milk produced at such dairy shall be heated at 145° F. for 40 minutes, or 155° F. for 30 minutes, or 167° F. for 20 minutes, and immediately cooled to 50° F. These facts should also be part of the notice, and such heating of the milk should be continued during the accepted period of incubation for such contagious disease.

The following method of fumigation is recommended:

After all windows and doors are closed and the cracks sealed by strips of paper applied with flour paste, and the various articles in the room so hung or placed as to be exposed on all sides, preparations should be made to generate formaldehyde gas by the use of 20 ounces of formaldehyde and 10 ounces of permanganate of potash for every 1,000 cubic feet of space to be disinfected.

For mixing the formaldehyde and potassium permanganate a large galvanized-iron pail or cylinder holding at least 20 quarts and having a flared top should be used for mixing therein 20 ounces of formaldehyde and 10 ounces of permanganate. A cylinder at least 5 feet high is suggested. The containers should be placed about in the rooms and the necessary quantity of permanganate weighed and placed in them. The formaldehyde solution for each pail should then be measured into a widemouthed cup and placed by the pail in which it is to be used.

Although the reaction takes place quickly, by making preparations as advised all of the pails can be "set off" promptly by one person, since there is nothing to do but pour the formaldehyde solution over the permanganate. The rooms should be kept closed for four hours. As there is a slight danger of fire, the reaction should be watched through a window or the pails placed on a noninflammable surface.

97. Following a weekly medical inspection of the employees, a monthly report shall be submitted to the secretary of the medical milk commission, on the same recurring date by the examining visiting physician.

The following schedule, filled out in writing and signed by himself, is recommended as a suitable form for the attending physician's report:

This is to certify that, on the dates below indicated, official visits were made to the ——— dairy, owned and conducted by ——— of ——— (indicating town and State), where careful inspections of the dairy employees were made.

(*a*) Numbei and dates of visits since last report. ———.

(*g*) Number of men employed on the plant. ———.

(*c*) Has a recent epidemic of contagion occurred near the dairy, and what was its nature and extent? ———.

(*d*) Have any cases of contagious or infectious disease occurred among the men since the last report? ———.

(*e*) Disposition of such cases. ———.

(*f*) What individual sickness has occurred among the men since the last report? ———.

(*g*) Disposition of such cases. ———.

(*h*) Number of employees now quarantined for sickness. ———.

(*i*) Describe the personal hygiene of the men employed for milking when prepared for and during the process of milking. ———.

(*j*) What facilities are provided foi sickness in employees? ———.

(*k*) General hygienic condition of the dormitories or houses of the employees. ———.

(*l*) Suggestions for improvement. ———.

(*m*) What is the hygienic condition of the employees and their surroundings? ———.

(*n*) How many employees were examined at each of the foregoing visits? ———.

(*o*) Remarks. ———.

——— ———,
Attending Physician.

Date, ———.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

DENVER, COLO.

POISONOUS AND HABIT-FORMING DRUGS—SALE OR DISPOSAL OF.

SECTION 1. It shall be unlawful for any apothecary, druggist, or pharmacist, or any employee thereof, or any person whatsoever, to sell, furnish, give away, obtain, or procure any cocaine or its salts, alpha or beta eucaine or their salts, or any compound mixture or solution or other product whatsoever of which cocaine or any of its salts, or alpha or beta eucaine or any of their salts is a constituent or ingredient, opium, morphine, or its derivatives, except upon the original written order or prescription of any authorized practitioner of medicine, dentistry, or veterinary surgeon, not to exceed 45 grains of cocaine and its salts, alpha or beta eucaine and their salts, not to exceed 12 ordinary doses of opium, not to exceed 6 ordinary doses of morphine and its salts, and not to exceed 16 ordinary doses of the derivatives of opium or morphine, which order or prescription shall not again be refilled, or copy given of same without the consent of the original prescriber if so specified on the original prescription in writing. But these provisions shall not apply to tablets of heroin or its salts, not to exceed 2 grains; not to tablets of codeine or any of its salts, not to exceed 3 grains; not to paregoric; not to any mixture or compound containing codeine 2 grains, opium 2 grains, morphine one-half of a grain, or heroin one-third of a grain to the fluid or Troy ounce; not to the preparations containing opium and recommended and sold in good faith for diarrhea or cholera, each bottle or package of which is accompanied by specific directions for use and a caution against habitual use; nor to the powder of ipecac and opium, commonly known as Dover's powder, not to exceed 60 grains; not to liniments or ointments when plainly labeled for "External use;" nor to toothache drops, which are plainly labeled "For toothache, for external use;" nor to the sales made by wholesale druggists to retail druggists actively engaged in business, to physicians, dentists, or veterinary surgeons; nor to regularly incorporated hospitals, sanitoria, or dispensaries; nor to the sale of retail druggists to retail druggists actively engaged in business; nor to the sale by retail druggists actively engaged in business to physicians, dentists, veterinary surgeons, regularly incorporated hospitals, sanitoria, or dispensaries, provided that the wholesale and retail druggist shall affix or cause to be affixed to the bottle, box, vessel, or package containing the article sold, and upon the outside wrapper of the package as originally put up, a label distinctly displaying the name and quantity of cocaine or its salts, alpha or beta eucaine or their salts, or any compound mixture or solution or other product whatsoever of which cocaine or any of its salts, or alpha or beta eucaine or any of their salts is a constituent or ingredient, opium, morphine, or any derivative thereof, and the word "Poison," with the name and place of business of the seller printed in red ink, and provided also, that the wholesale and retail dealer shall, before delivering any of the articles, make or cause to be made in a book kept for the purpose an entry of the sale thereof, stating the date of sale, the quantity, name, and form in which sold, the name and address of the purchaser, and the name of the person by whom the entry is made. Said book shall always be open for inspection by the proper authorities of the law and shall be preserved for at least five years after the last entry made therein.

SEC. 2. It shall be unlawful for any duly registered physician, dentist, or veterinary surgeon, or any other person to prescribe, sell, or offer for sale, dispense, or give away any cocaine or its salts, alpha or beta eucaine or their salts, or any compound mixture or solution or other product whatsoever of which cocaine or any of its salts, or alpha or beta eucaine or any of their salts is a constituent or ingredient, opium, morphine, or any derivative thereof to any person addicted to the habitual use of opium, morphine, or any derivative thereof, cocaine or its salts, alpha or beta eucaine or their salts, or any compound mixture or solution or other product whatsoever of which cocaine or any of its salts, or alpha or beta eucaine or any of their salts, is a constituent or ingredient, except in emergency cases, but at the time administering same, they shall make or cause to be made an entry in a book kept for that purpose, stating the date, quantity, name, and form in which administered, name and address of the patient, and the name of the person by whom the entry is made, such book to be subject to same inspection as those of the wholesale and retail dealer.

Sec. 3. It shall be unlawful for any retail druggist or other person to sell pure carbolic acid, except on a physician's prescription, but a mixture composed of equal parts, by measure, of carbolic acid, alcohol, and glycerin, bearing the label stating the percentage of alcohol may be sold.

Sec. 4. It shall be unlawful for any person to present any false, or forged, or untrue, or fictitious prescription or order for any poisons, or to obtain the same by means of thereof, or to give any false or fictitious name, or to give or make any false statement, or any false representation, to obtain or in obtaining the same.

Sec. 5. Any person violating any of the provisions of this ordinance shall be punished by a fine of not less than $10 nor more than $200 for each offense.

[Ordinance adopted Feb. 21,1912.]

EAST PROVIDENCE (TOWN), R. I.

VACCINATION OF SCHOOL CHILDREN.

Section 1. For each case of vaccination at public expense of a child of school age, as required by State law, there shall be paid by the town the sum of 75 cents, which shall include a certificate to the child so vaccinated, this sum, in each instance to be paid only on proper attestation by the health officer that a record of such case has been certified to him by the officiating physician.

Sec. 2. Any practicing physician may, at public expense, vaccinate a child or children of school age, subject to the following rules:

First. Only such pure bovine virus as is approved by the State board of health shall be used in any case.

Second. In no instance shall a scab from a person vaccinated be used and transmitted to a child in vaccination.

Third. A certificate of vaccination shall be issued to the child vaccinated by the officiating physician, who shall also certify each case to the health officer of the town.

Sec. 3. The health officer of the town shall keep a record of all cases certified to him of the vaccinated children provided for herein.

Sec. 4. A family physician, so called, or physician vaccinating a child or children of school age, at private expense, shall comply with the provisions of this ordinance relative to certifying each case of such vaccinated child to the health officer of the town.

Sec. 5. Any physician who shall violate any provision of this ordinance shall, upon conviction, pay a fine of not more than $20, or be imprisoned not more than 10 days for each offense. And further, a physician so offending and convicted of the same shall be denied the privilege of vaccinating school children at public expense.

[Chap. 29 of an ordinance adopted Aug. 2, 1911.]

HOLLAND, MICH.

GARBAGE AND REFUSE—DISPOSAL OF.

Rule 7. All rubbish, such as tin cans, leaves, ashes, cast-off crockery, bottles, glassware, and such other substances as do not properly constitute garbage shall be kept in suitable bins or containers, and shall be removed before the 1st day of June of each year and again before the 1st day of December of each year; nor shall they be deposited upon any street, alley, public space, or vacant lot, except by permission of the board of health.

Rule 8. A garbage district is hereby established, which shall include all of the territory within the city limits and which shall be governed by the following regulations:

First. Each and every householder, or occupant of any dwelling house, boarding house, or restaurant having garbage to dispose of shall provide one or more metal cans sufficient to receive all garbage that may accumulate between the times of collection; each can to have a capacity not to exceed 10 gallons and provided with a handle, bail, and tight-fitting cover. These cans must be so placed that they shall be at all times readily accessible for removing or emptying the same and no other receptacle shall be used for garbage.

Second. All garbage accumulating between the times of collection shall be placed in such cans: *Provided*, That no tin cans, wire, or metal of any kind, glass, chinaware, crockery, or coarse rubbish shall be placed in such cans.

Third. All garbage deposited in said cans shall be removed once a week by a licensed scavenger or garbage collector, except in cases of hotels, restaurants, and boarding houses, where garbage shall be collected and removed daily. The expense of such collection shall be paid for by the owner, agent, occupant, or tenant of the premises from which the said garbage is collected, but in no instance shall the fee charged for such collection exceed 5 cents per week for each can, whole or part. In case of hotels and restaurants, tight barrels with tight-fitting covers may be used in place of cans.

Fourth. The scavenger or garbage collector shall provide a covered tank wagon, so constructed that it shall not leak or spill, in which all garbage to be removed shall be collected and conveyed to places at least one-fourth of 1 mile outside of the city limits, there to be disposed of.

Fifth. The wagon and conveyors used for collection shall be kept cleansed and as free from offensive odors as possible; nor shall they be kept in any street, alley, or public place, nor upon any private premises longer than is reasonably necessary to collect the garbage, nor within the city limits except by permission of the health officer.

[Regulations, board of health, adopted Oct. 2, 1911.]

LITTLE ROCK, ARK.

GARBAGE AND REFUSE—COLLECTION AND DISPOSAL.

SECTION 1. The various kinds of waste matter, for the purposes of this ordinance, shall be defined as follows: (A) kitchen garbage, which is the animal and vegetable refuse from the kitchen; (B) ashes, cinders, etc., which are the refuse matter from stoves, furnaces, fireplaces, etc.; (C) rubbish, which consists of wornout household articles, rags, paper, broken crockery, tin cans, old metal, etc; (D) yard sweepings, which are composed of paper, dust, stable manure, leaves, weeds, grass, sticks, etc.

SEC. 2. The short name of this ordinance shall be "The Garbage Ordinance," and all items of waste matter mentioned or suggested in section 1 of this ordinance shall, for convenience, be hereinafter covered by the term "garbage."

SEC. 3. No person shall place or throw waste paper, trash, or other garbage on any street, sidewalk, or public alley of the city of Little Rock at any time, day or night: *Provided*, That all such garbage must be placed in a receptacle as hereinafter described on the premises at some point accessible to the garbage collector: *Provided*, That the exact location of all receptacles may be under the further direction and control of the superintendent of the garbage department.

SEC. 4. All proprietors of hotels, restaurants, cafés, boarding or eating houses, housekeepers, and occupants of buildings in the city of Little Rock shall provide all cans at their own expense, and shall deposit daily their accumulations of garbage in a galvanized iron can, with a tin or metal cover, such cans to have a capacity of 20 gallons; said receptacles to be provided with two handles.

Provided, That yard and stable manure, ashes, and cinders shall not be placed in the garbage can, but shall be kept near such can and convenient of access to the garbage collector; ashes and cinders may be kept in any box or vessel that can be handled by one man; yard and stable manure shall be kept in any covered box or bin so arranged that flies can not reach the manure stored therein.

Provided, That where owner or lessee of premises rents a portion thereof to two or more families or occupants, he or she shall provide a garbage can as above set forth, and shall cause such garbage to be removed in accordance with the terms of this ordinance.

SEC. 5. Manufacturers or merchants, where garbage consists of paper, excelsior, or other packing material, shall provide a box or other receptacle so that the contents may not be blown about or scattered. Said receptacle shall be of such size that it may be handled by one man.

SEC. 6. It shall be unlawful for any person, other than the garbage collector, person owning the can or other receptacle, or the servant or employee of such person, to deposit any garbage, article, or substance in any receptacle, or to remove, injure or destroy, uncover, or in any manner disturb such receptacle, or any portion of its contents, except as provided in section 16 of this ordinance.

SEC. 7. For the purpose of carrying out the provisions of this ordinance a garbage department is hereby created and the offices of superintendent and assistant superintendents of the garbage department are hereby created. The office of the garbage department shall be in the city hall. Garbage matters and things pertaining thereto shall be within the jurisdiction and in the charge of the committee on public works and grounds.

Sec. 8. The duties of the superintendent of the garbage department shall be to superintend the gathering of all garbage and to look after its proper disposal, to direct the inspection of all premises, to direct the handling of men and teams necessary to do the work of the department, and to superintend the collection of moneys by employees of the department, and to make daily cash reports to the city clerk, and to make daily cash settlements with the city collector.

The duty of the assistant superintendents shall be to assist the superintendent in his duties. The superintendent and the assistant superintendents are hereby empowered to arrest any violators of the law and they shall be sworn in as regular police.

Sec. 9. Each of said officers before entering on the discharge of his duties shall enter into bond in the sum of $1,000, conditioned on the faithful and efficient discharge of his duties as such officer.

Sec. 10. The council shall elect the superintendent of the garbage department, and the superintendent shall appoint the assistant superintendents. The term of office of the superintendent and assistant superintendents shall be one year, provided that the first and present term shall expire April 15, 1912.

Sec. 11. The council shall have the power to remove the superintendent of the garbage department for inefficiency or for other cause, and the superintendent shall have the power to remove the assistant superintendents for inefficiency or for other cause. The salary of the superintendent shall be $100 per month and that of the assistant superintendents shall be $80 per month, each payable monthly.

Sec. 12. A careful record of all moneys received by the garbage department shall be kept by the city collector, under the account to be called "Garbage fund." All expenses of the garbage department are to be paid out of such fund.

Sec. 13. All garbage shall be gathered and removed from residences at least once a week and from hotels, restaurants, cafés, and livery stables at least once a day, Sundays excepted, unless otherwise ordered by the board of health or the superintendent of the garbage department of the city of Little Rock; provided that the garbage department shall not be required to remove garbage without proper compensation therefor, as hereintafter specified.

Sec. 14. All garbage shall be hauled and dumped in the Arkansas River at what is known as the city dump or to such other place or places to be provided by the committee on public works and grounds and approved by the board of health, and shall be disposed of so as not to produce a nuisance or unsanitary condition; and garbage shall not be dumped or destroyed at any other place except that fixed as aforesaid, except by written permission of the committee on public works and grounds and the board of health.

Sec. 15. The garbage department shall charge for service in removing and disposing of garbage as follows: For each can or other recetacle, 10 cents: *Provided*, That garbage-department coupon books be issued, each coupon representing 10 cents, these books to be bound in denominations of 50 cents, $1, and $5. These coupon books to be sold by the garbage department for cash in advance at a discount of 10 per cent.

All garbage service to be paid for in cash or in garbage-department coupons to the driver at the time the service is rendered. When driver collects cash, he shall give receipt for same out of coupon numbered receipt books, to be provided.

Sec. 16. Nothing in this ordinance shall be construed to mean that the garbage department may collect for service unless garbage is actually removed from the premises by the garbage department, the right being extended to all householders or others to remove their own garbage or to have it removed by others than the garbage department, or to destroy it on their own premises, under the supervision of the board of health and the committee on public works and grounds.

Sec. 17. Any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof in the police court shall be fined not less than $5 nor more than $25, and each day's offense shall be considered a separate offense and fined accordingly.

Sec. 18. This ordinance being necessary for the immediate preservation of the public peace, health, and safety, shall be in force and effect from and after its passage, and all ordinances or parts of ordinances in conflict herewith are hereby repealed in so far as they conflict.

[Ordinance No. 1720, adopted Oct. 2, 1911.]

NEW YORK, N. Y.

HABIT-FORMING DRUGS—SALE OF.

SEC. 182. No cocaine or salts of cocaine, eucain, alpha or beta eucain, either alone or in combination with other substances, or any substance under any other name giving a similar chemical test of cocaine, and no opium or official preparations of opium and no morphine or salts of morphine, or the derivatives of either or any of them, shall be sold at retail by any person in the city of New York except upon the written prescription of a physician, duly authorized to practice as such, or other person duly authorized by law to practice medicine and administer drugs or perform surgery wit
the use of instruments.

Nothing hereinbefore mentioned, however, shall apply to compounded mixture
containing opium or morphine or their derivatives, the formulas for which are given in the latest dispensary or national formulary, in which said mixtures the maximum dose, as plainly stated on the label of the package, as dispensed does not contain i
excess of one-half a grain of powdered opium or the equivalent of its alkaloids; or t
preparations for external use only, in the form of liniments, lotions, ointments, o
oleates.

The last-mentioned preparations shall be labeled "For external use only" an
marked "Poison."

[Amendment to sanitary code adopted July 18, 1911.]

OIL CITY, PA.

GARBAGE AND REFUSE.

RULE 3. It shall be unlawful for any person, persons, or corporation or their e-
ployees or agents to throw or deposit, or cause to be thrown or deposited, into or on an
street, alley, lane, byway, lot, yard, or in any manure bin or manure pile within t
limits of the city, or to burn or cause to be burned in any of the above places a
decayed or decaying fruit, garbage, vegetables, or animal matter, or any other ma
or substance which is or may become unhealthy, insanitary, or cause offensive od
rubbish, tin cans, or filth of any kind.

RULE 4. It shall be unlawful for any person, persons, or corporation or their
ployees or agents to throw or cause to be thrown or deposited any garbage, filth,
cans, manure, or waste matter of any kind upon the banks or in the stream
pollute in any manner the streams of the Allegheny River or Oil Creek or any o
tributaries or any other stream or pond of water within the limits of the city
City.

RULE 5. It shall be the duty of the owner or owners or agents thereof of eve
yard, or premises, vacant or occupied, to keep said lot, yard, or premise
same to be kept free from all accumulations of filth, manure, rubbish, tin cans
or waste matter of any kind that is insanitary or likely to engender disea
foul or offensive odors to arise therefrom.

RULE 6. It shall be the duty of the owner or owners or agents of every h
ing, or structure to keep the cellars thereof clean and free from all imp
rubbish, or filth of any kind which is likely to engender disease or cau
therefrom, and to keep said cellars free from all accumulations of sur
water and to provide proper drains for carrying away all such waters
said cellars to be whitewashed with fresh lime at least once in each and

RULE 11. Every resident, householder, boarding-house keeper, retail
or restaurant shall be provided with a water-tight garbage can, provid
cover, into which all vegetable and animal matter and garbage shall be
said can shall be kept covered at all times. Garbage cans must be
sanitary and should be cleansed with boiling water at least twice eac

RULE 12. Every contractor or collector of garbage must use wat
receptacles for the collection of garbage, and said wagons or receptacle
with good tight covers, and said covers must be kept closed at all
garbage is being placed in same. Wagons or receptacles must n
such a manner that the covers will not fit tight on them.

RULE 13. Collections of garbage must be made at least twice
between May 1 and October 1 and at least once each and every w
1 and May 1 of each and every year.

RULE 14. In the "business district" all garbage must be coll
between May 1 and October 15 and before 8.30 a. m. between
in each and every year, and no garbage wagon shall be allow
district after the hours mentioned above, whether said wagon

[illegible]

[illegible] is was made [illegible] eda County, [illegible] els; April 20, [illegible] ls; April 26, 1 [illegible] n the vicinity [illegible] 1912.

[illegible] of a squirrel-free [illegible] isco Bay, 10,000 [illegible] poison during the

last case quirrel gue.	Total number of rodents found infected since May, 1907.
....	398 rats.
....	126 rats.
....	None.
, 1908....	1 squirrel.
, 1912....	188 squirrels and 1 wood rat.
, 1911....	364 squirrels.
1911.....	1 squirrel.
1911.....	5 squirrels.
911.....	Do.
911.....	22 squirrels.
1911....	18 squirrels.
1910.....	1 squirrel.
910......	23 squirrels.
1910.....	3 squirrels.
1911.....	13 squirrels.
....	25 rats.

[illegible]

household on his own premises by feeding the same to fowl or animals where the same is not prohibited by ordinance.

SEC. 4. It shall be unlawful for any person other than the owner or an officer or employee of said city, or an employee of the person, firm, or corporation holding a contract with the city of Pomona for the collection, removal, and disposal of garbage, to interfere in any manner with any such vessel, tank, or receptacle, or the contents thereof, or to remove any such vessel, tank, or receptacle from the location where the same was placed by the owner thereof, or to remove the contents from any such vessel, tank, or receptacle. It shall be unlawful for any person to place, or to cause or permit to be placed, in any such vessel, tank, or receptacle any substance other than garbage.

SEC. 5. It shall be unlawful for any person, firm, or corporation to deposit, or to cause or permit to be deposited, any garbage upon or in any public street, alley, or other public place or upon any premises in the said city.

SEC. 6. The city clerk shall certify to the passage of this ordinance and shall cause the same to be published once in the Pomona Daily Review, and 30 days thereafter it shall take effect and be in force.

[Ordinance No. 352, adopted Sept. 5, 1911.]

REPORTS TO THE SURGEON GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PLAGUE-PREVENTION WORK.

PLAGUE-INFECTED SQUIRRELS FOUND.

During the week ended May 4, 1912, positive diagnosis was made of 35 plague-infected ground squirrels found in Alameda County, Cal., as follows: April 16, 2 squirrels; April 17, 3 squirrels; April 20, 10 squirrels; April 22, 15 squirrels; April 24, 3 squirrels; April 26, 1 squirrel; and 1 squirrel received at the laboratory from the vicinity of Livermore on April 16 was proven positive May 3, 1912.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 10,000 acres of land in Alameda County were covered with poison during the week ended May 4, 1912.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Apr. 26, 1912	188 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

PLAGUE-PREVENTION WORK—Continued.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	May 4, 1912	11	[1] 265	164	
Oakland	do	17	[2] 784	637	
San Francisco	do	5	[3] 1,783	1,452	
Washington:					
City—					
Seattle	do		1,028	981	

[1] Identified: Mus norvegicus, 178; Mus rattus, 2; Mus musculus, 90.
[2] Identified: Mus norvegicus, 650; Mus rattus, 2; Mus musculus, 130; Mus alexandrinus, 2.
[3] Identified: Mus norvegicus, 999; Mus musculus, 331; Mus rattus, 206; Mus alexandrinus, 248.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended May 4, 1912, 512 ground squirrels collected in Alameda County, and 1 from Berkeley County, Cal., were examined for plague infection. Thirty-five from Alameda County were found to be plague infected.

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Chicago, Ill	1		New Orleans, La	1	
Cincinnati, Ohio	1	1	New York, N. Y	7	7
Dayton, Ohio		1	Oklahoma City, Okla	1	
El Paso, Tex	1		Omaha, Nebr	1	
Everett, Mass	1		Philadelphia, Pa	2	
Haverhill, Mass	1		Richmond, Va		2
Jersey City, N. J		1	St. Louis, Mo	2	
Kansas City, Kans	3		San Francisco, Cal	1	1
Kansas City, Mo	5	10	South Bethlehem, Pa	1	
Massillon, Ohio		1	Taunton, Mass		1
New Bedford, Mass	1				

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Binghamton, N. Y	1		Passadena, Cal	1	
Buffalo, N. Y	5		Pittsburgh, Pa	4	
Camden, N. J	1		Philadelphia, Pa	11	1
Cleveland, Ohio	6	1	Plainfield, N. J	10	
Denver, Colo	3		Reading, Pa	1	
Duluth, Minn	1		Richmond, Va		1
Harrisburg, Pa	1		St. Louis, Mo	7	2
Homestead, Pa	1		San Francisco, Cal	1	
Los Angeles, Cal	1		Saginaw, Mich		1
Milwaukee, Wis	4	1	South Bethlehem, Pa	2	
Newark, N. J		1	Wilkes-Barre, Pa	1	
New York, N. Y	50	6	Williamsport, Pa	1	

PELLAGRA.

During the week ended May 25, 1912, pellagra was reported as follows: Houston, Tex., 1 death; Richmond, Va., 1 death.

During the month of May, 1912, 6 deaths from pellagra were reported at Charleston, S. C.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Aurora, Ill		2	Newark, N. J		5
Baltimore, Md		17	New Bedford, Mass		2
Binghamton, N. Y	1	5	Newburyport, Mass		2
Boston, Mass		22	Newton, Mass		2
Braddock, Pa		3	New Orleans, La		2
Bridgeport, Conn		4	New York, N. Y		109
Buffalo, N. Y		6	Niagara Falls, N. Y		3
Cambridge, Mass		2	Norristown, Pa		1
Chelsea, Mass		1	North Adams, Mass		1
Chicago, Ill	27	90	Northampton, Mass		2
Chicopee, Mass		3	Oakland, Cal		6
Cincinnati, Ohio		5	Omaha, Nebr		4
Cleveland, Ohio	21	7	Pasadena, Cal		1
Danville, Ill		2	Passaic, N. J		4
Dayton, Ohio		3	Philadelphia, Pa	22	30
Denver, Colo		5	Pittsburgh, Pa	17	19
Dunkirk, N. Y	2	1	Pittsfield, Mass		2
El Paso, Tex		2	Plainfield, N. J		1
Elizabeth, N. J		7	Providence, R. I		4
Evansville, Ind		1	Reading, Pa		5
Fall River, Mass		5	Richmond, Va		5
Fort Wayne, Ind		1	Roanoke, Va		1
Grand Rapids, Mich	3		Rockford, Ill		2
Harrisburg, Pa		3	Saginaw, Mich		5
Houston, Tex		2	San Antonio, Tex		4
Kalamazoo, Mich	1		San Francisco, Cal	5	
Kansas City, Mo	3	2	Saratoga Springs, N. Y	2	1
Knoxville, Tenn		2	Schenectady, N. Y	3	1
La Fayette, Ind		1	Seattle, Wash		1
Lancaster, Pa	2		South Bethlehem, Pa	3	1
Lawrence, Mass		3	South Omaha, Nebr		1
Los Angeles, Cal	2	7	Spokane, Wash		2
Lowell, Mass		5	Springfield, Ill		1
Lynchburg, Va		1	Springfield, Mass		2
Lynn, Mass		2	Taunton, Mass		3
Manchester, N. H	1	1	Toledo, Ohio		3
Marinette, Wis		2	Washington, D. C		2
Marlboro, Mass		1	Wilkes-Barre, Pa		3
Medford, Mass		3	Williamsport, Pa	1	
Moline, Ill		1	Wilmington, N. C	1	2
Montgomery, Ala		1	Yonkers, N. Y		4
Nashville, Tenn		2			

POLIOMYELITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Buffalo, N. Y	1		Pittsburgh, Pa	1	
Lancaster, Pa	1		Seattle, Wash		1
New York, N. Y	2		Taunton, Mass	2	1

RABIES.

During the week ended May 25, 1912, rabies was reported as follows: Chicago, Ill., 1 death.

TETANUS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
New Bedford, Mass		1	Toledo, Ohio		1
New Orleans, La		1	Woburn, Mass	1	1
Philadelphia, Pa	1	1	Yonkers, N. Y		1

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED JUNE 14, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
*Alabama:				
Montgomery	May 26-June 1	1		
Colorado:				
Counties—				
Archuleta	May 1-31	3		
Boulder	do	6		
Denver	do	17		
Larimer	do	1		
Lincoln	do	2		
Los Animas	do	1		
Washington	do	17		
Weld	do	4		
Total for State		51		
New Jersey:				
Counties—				
Essex	Apr. 1-30	1	1	This case was erroneously reported on page 711 in March.
Middlesex	May 1-31	1		
Total for State		2	1	
New York:				
Counties—				
Broome	Apr. 1-30	4		
Chattanooga	do	11		
Chautauqua	do	1		
Cortland	do	1		
Erie	do	1		
Monroe	do	1		
New York	do	1		
Niagara	do	9		
Ontario	do	2		
Steuben	do	2		
Total for State		33		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended June 14, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
South Dakota:				
Counties—				
Brown	Apr. 1-30	18		
Charles	do	3		
Clark	do	3		
Clay	do	4		
Corson	do	1		
Day	do	1		
Hand	do	1		
Marshall	do	8		
Moody	do	1		
Roberts	do	1		
Spink	do	3		
Total for State		44		
*Tennessee:				
Counties—				
Knox—				
Knoxville	May 12-June 1	21		
Shelby	May 1-31	1		
Total for State		22		
Vermont:				
Counties—				
Chittenden	May 1-31	4		
Washington	do	2		
Windsor	do	5		
Total for State		11		
Grand total for the United States		164	1	

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

California.—Month of April, 1912. Population, 2,377,549. Total number of deaths from all causes 2,605, including diphtheria 22, measles 27, scarlet fever 5, tuberculosis 420, typhoid fever 33.

Florida.—Two weeks ended May 26, 1912. Reports received from the State board of health show diphtheria present in 5 localities with 5 cases, malaria in 10 localities with 15 cases, smallpox in 1 locality with 2 cases and 1 death, tuberculosis in 8 localities with 18 cases, typhoid fever in 10 localities with 13 cases.

Maryland.—Month of April, 1912. Population, 1,295,346. Total number of deaths from all causes 797, including diphtheria 6, measles 8, scarlet fever 1, tuberculosis 102, typhoid fever 13. Cases reported: Diphtheria 39, measles 332, scarlet fever 25, typhoid fever 54. The typhoid-fever cases were distributed as follows: Potomac River watershed 23 cases, Patapsco River watershed 6 cases, Gunpowder River watershed 1 case.

Massachusetts.—Week ended April 6, 1912. Population of reporting towns, 2,580,430. Total number of deaths from all causes 785, including diphtheria 4, measles 4, scarlet fever 4, tuberculosis 64, typhoid fever 1. Cases reported: Diphtheria 70, measles 655, scarlet fever 131, smallpox 38, tuberculosis 172, typhoid fever 20.

Week ended April 13, 1912. Total number of deaths from all causes 805, including diphtheria 8, measles 9, scarlet fever 4, tuberculosis 87, typhoid fever 2. Cases reported: Diphtheria 95, measles 833, scarlet fever 152, smallpox 23, tuberculosis 208, typhoid fever 24.

Week ended April 20, 1912. Population of reporting towns, 2,567,482. Total number of deaths from all causes 815, including diphtheria 3, measles 6, scarlet fever 4, tuberculosis 77, typhoid fever 3. Cases reported: Diphtheria 66, measles 711, scarlet fever 95, smallpox 27, tuberculosis 196, typhoid fever 24.

Week ended April 27, 1912. Population of reporting towns, 2,580,430. Total number of deaths from all causes 765, including diphtheria 5, measles 9, tuberculosis 88, typhoid fever 7. Cases reported: Diphtheria 98, measles 942, scarlet fever 100, smallpox 9, tuberculosis 199, typhoid fever 19.

New Jersey.—Month ended May 10, 1912. Population, 2,537,167. Total number of deaths from all causes 3,125, including diphtheria 32, measles 63, scarlet fever 11, tuberculosis 411, typhoid fever 14.

New York.—Month of March, 1912. Population, 9,113,614. Total number of deaths from all causes 13,329, including diphtheria 169, measles 134, scarlet fever 129, tuberculosis 1,643, typhoid fever 68. Cases reported: Diphtheria 1,883, measles 10,642, scarlet fever 3,117, smallpox 54, tuberculosis 2,672, typhoid fever 332.

North Dakota.—Month of April, 1912. Population, 577,056. Total number of deaths from all causes 359, including tuberculosis 3. Cases reported: Diphtheria 11, measles 8, scarlet fever 43, smallpox 15, tuberculosis 8, typhoid fever 13.

Pennsylvania.—Month of March, 1912.

Mortality.—Population, 7,665,111. Total number of deaths 10,472, including typhoid fever 94, scarlet fever 55, diphtheria 147, measles 95, whooping cough 75, influenza 146, malaria 1, tuberculosis of the lungs 873, tuberculosis of other organs 157, cancer 444, diabetes 85, meningitis 53, acute anterior poliomyelitis 7, pneumonia 1,618, diarrhea and enteritis under 2 years 210, diarrhea and enteritis over two years 60, Bright's disease 619, early infancy 617, suicide 78, accidents in mines 109, railway injuries 123, other forms of violence 487, all other diseases 4,319.

Morbidity.—Month of April, 1912. Total number of cases of communicable diseases reported 14,286, including anterior poliomyelitis 6, cerebrospinal meningitis 11, chicken pox 1,321, diphtheria 923, erysipelas 183, German measles 155, malarial fever 8, measles 5,930, mumps 1,123, pneumonia 653, puerperal fever 3, scarlet fever 1,171, smallpox 51, tetanus 8, trichiniasis 1, tuberculosis 1,254, typhoid fever 443, whooping cough 1,042.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAY 25, 1912.

Cities.	Population United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	166	10		28		9				39	26	4	
Boston, Mass	670,585	197	32	1	191	1	22				57	20	12	1
Chicago, Ill	2,185,283	600	123	20	288	4	243	16	2		130	68	0	3
Cleveland, Ohio	560,663	165	22	5	130	1	27	3			30	14	3	1
New York, N. Y	4,766,883	1,471	276	29	1,676	22	351	15			556	183	35	6
Philadelphia, Pa	1,549,008	450	74	9	38	1	70				123	49	44	3
Pittsburgh, Pa	533,905	129	18	1	176	4	45	4			22	12	8	1
St. Louis, Mo	687,029	215	28	3	21		22	1	1		50	19	8	
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	113	23		75	1	18				22	11	11	4
Cincinnati, Ohio	364,463	109	9	2	19		20	2			31	27	1	
Detroit, Mich	465,766	146	11				34	3	2					
Los Angeles, Cal	319,198	102	8	1	16		5		1		22	20	4	
Milwaukee, Wis	373,857	123	5		139	1	22		2		17	13	14	3
Newark, N. J	347,469	93	22	1	40	1	16				32		1	2
New Orleans, La	339,075	78	2		31		3		5		22	2	13	
San Francisco, Cal	416,912		1		18	1	1		1		22	15	2	
Washington, D. C	331,069	102	4		136		4				22	17	7	
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	51	9		8		11	1	5			11		
Jersey City, N. J	267,779	79		1				2				5		
Kansas City, Mo	248,381	24	4		4		3				3	12		
Providence, R. I	224,326	79	18	2	18	2	13	2				8	4	1
Seattle, Wash	237,194	37	1		13		8				9	7	1	
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	25	3		2		8	1			4	5		1
Cambridge, Mass	104,839	26	5	2	73		6				6	1	1	
Columbus, Ohio	181,548	47	1		35		8	1			4	3	4	
Dayton, Ohio	116,577	37	1		71		1					2		
Fall River, Mass	119,295		5	1	1						5	1	2	1
Grand Rapids, Mich	112,571	36			5		3				8	4	1	1
Lowell, Mass	106,294	48			70	8	6				7	3		1
Nashville, Tenn	110,364	40			1				1		2	1	1	
Oakland, Cal	150,174	42	2		17		1				1	5		1
Omaha, Nebr	124,096	29	2				1		1			1		
Richmond, Va	127,628	46	3		25		1				35	3		
Spokane, Wash	104,402		1		31		1		4			1		
Toledo, Ohio	168,497	46	7	1	75		1					5	4	1
Worcester, Mass	145,986	43	7	3	50	3	6				6	3	3	
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	16	1									1		
Bayonne, N. J	55,545	25	2	1	16		5				3	2		
Brockton, Mass	56,878	9	1		30						3		2	
Camden, N. J	94,538		1				3				8			
Duluth, Minn	78,466	13					2		1		1	1		
Elizabeth, N. J	73,409	26			8		1	1			6	1		
Evansville, Ind	69,647	15									1	2		1
Fort Wayne, Ind	63,933	20			10							3	1	
Harrisburg, Pa	64,186	18	3	1	12						3	1	1	1
Hoboken, N. J	70,324		1		3		1				4	1		
Houston, Tex	78,800	30												1
Johnstown, Pa	55,482	19	2		18						4	2		
Kansas City, Kans	82,331				3		3		1		1		1	
Lawrence, Mass	85,892	20			2						3	4		

MORBIDITY AND MORTALITY—Continued.

***Morbidity and mortality table, cities of the United States, for week ended May 25, 1912*—Continued.**

Cities.	Population United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
***Cities having from 50,000 to 100,000 inhabitants*—Continued.**														
Lynn, Mass	89,336	23	4		18		3				6	3		
Manchester, N. H	70,063	27	2		8						2	2		
New Bedford, Mass	96,652	21	2		2		1				9	1		
Oklahoma City, Okla	64,205	12			1						1		2	
Passaic, N. J	54,773	19	2	1	36						1	3		
Reading, Pa	96,071	29	2	1	18		4				2		12	2
Saginaw, Mich	50,510	16	2		10		4		1		2	5	3	
San Antonio, Tex	96,614	55					4					5	3	
Schenectady, N. Y	72,826	21	2		52		5				2	2		
South Bend, Ind	53,684	15					2							
Springfield, Ill	51,678	14							1					
Springfield, Mass	88,926	24	1		8		2				4	2	1	
Trenton, N. J	96,815	33			1		2				5	4	2	1
Wilkes-Barre, Pa	67,105	23			6		1				9	2		
Yonkers, N. Y	79,803		9		6		7				4	1		
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	14	1				3							
Aurora, Ill	29,807	10	2	1	2							1		
Berkeley, Cal	40,434	9	2	1	9						1			
Binghamton, N. Y	48,443	18	1								4	2	1	
Brookline, Mass	27,792	5			24						2			
Chelsea, Mass	32,452	14	1		40		1				3	3		
Chicopee, Mass	25,401	8			13									
Danville, Ill	27,871	8										4		1
East Orange, N. J	34,371				17						2			
El Paso, Tex	39,279	28					5		2			25	1	
Everett, Mass	33,484	9	2		5							1		
Fitchburg, Mass	37,826	8			1		1				3		1	
Haverhill, Mass	44,115	7	1		18		5				1		2	
Kalamazoo, Mich	39,437	16	1		1		2				4	1	1	
Knoxville, Tenn	36,346	13							7			5		
La Crosse, Wis	30,417	3	1				1				1		1	
Lancaster, Pa	47,227		1		28		1				3			
Lexington, Ky	35,099	13	2		1						3	1	1	
Lima, Ohio	30,508	8			1									
Lynchburg, Va	29,494	7	1		11							1	2	
Malden, Mass	44,404	6	1		7						3			
Montgomery, Ala	38,136	9					2					1	2	
Newcastle, Pa	36,280		5								1		1	
Newport, Ky	30,309	12					1				1	1		
Newton, Mass	39,806	8	5		34		1							
Niagara Falls, N. Y	30,445	14	2						3		1	1	3	
Norristown, Pa	27,875	7			3							1	3	
Orange, N. J	29,630	12	1		23		1					3	1	
Pasadena, Cal	30,291	13	1	1							4	3		
Pittsfield, Mass	32,121	9	6		1							1		
Portsmouth, Va	33,190	12							2			1		
Racine, Wis	38,002	15	2											
Roanoke, Va	34,874	11			18								1	
Rockford, Ill	45,401	9					9						16	
South Omaha, Nebr	26,259	8										1		
Superior, Wis	40,384	8	2									3		
Taunton, Mass	34,259	15			4		1					1		
Waltham, Mass	27,834	4			37						2	2		
West Hoboken, N. J	35,403	5			4		4	1						
Williamsport, Pa	31,860	8	1		51		1					1		
Wilmington, N. C	25,748	14					1				1	1		
York, Pa	44,750		1		18									
Zanesville, Ohio	28,026	6	1										4	1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended May 25, 1912—Continued.

Cities.	Population United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	13			21									
Ann Arbor, Mich	14,817	9												
Beaver Falls, Pa	12,191				1						1			
Biddeford, Me	17,079	30				1			3			2		
Braddock, Pa	17,759	9	1	1	2									
Cambridge, Ohio	11,327	1											1	
Camden, S. C		1										1		
Carbondale, Pa	17,040	9			16									
Clinton, Mass	13,075	2	2		2									
Coffeyville, Kans	12,687										1			
Columbus, Ga	20,554	6												
Columbus, Ind		2			1						1			
Concord, N. H	21,497	9			17									
Cumberland, Md	21,839	5			28	1					1		2	
Dunkirk, N. Y		4									4		2	
Galesburg, Ill	20,089	4	1				1							
Harrison, N. J	14,498	3									1	1		
Homestead, Pa	18,710	4	1				1							
Kearny, N. J	18,659	4	2		4				1				2	
La Fayette, Ind	20,081	6			2							1		
Marinette, Wis	14,610	5												
Marlboro, Mass	14,579	1									3			
Massillon, Ohio	13,879	3	2				1							
Medford, Mass	23,156	7	1		41		1							
Melrose, Mass	15,715	2			27		1				1			
Moline, Ill	24,199	5									2	1		
Montclair, N. J	21,150	4			3		1				1	1		
Morristown, N. J	12,507	12			5							1		
Nanticoke, Pa	18,509	5												
Newburyport, Mass	19,240	4					1					1	1	
North Adams, Mass	22,012	6			3									
Northampton, Mass	19,431	9			11						1	1		
Ottumwa, Iowa	22,012	9					2							
Plainfield, N. J	22,050	4	1		7		1				1			
Pottstown, Pa	15,599	4					2							
Saratoga Springs, N. Y		7												
South Bethlehem, Pa	19,973	7	6		6	1					1		1	
Steelton, Pa	14,246	2			30						1			
Wilkinsburg, Pa	18,294	5					2				2			
Woburn, Mass	15,308	3			3						3			

FOREIGN AND INSULAR.

AUSTRALIA.

Sydney—Examination of Rats.

The following information was taken from the bulletins issued by the department of health of New South Wales: During the three weeks ended April 27, 1912, 950 rats were examined for plague infection. No plague-infected rat was found.

The last case of human plague was reported May 29, 1909.

The last plague-infected rat was found April 25, 1910.

CHINA.

Amoy—Cholera.

The American consul reported June 3 the presence of cholera at Amoy.

Hongkong—Plague—Smallpox—Plague Rats.

Surg. Brown reports: During the week ended April 27, 129 cases of plague with 113 deaths and 17 cases of smallpox with 12 deaths were reported at Hongkong.

During the same period, 2,446 rats were examined for plague infection. Of this number 24 were found to be plague infected.

CUBA.

Transmissible Diseases.

The following statement was issued by the sanitary department:

Month of April, 1912.

	New cases.	Deaths.	Remaining under treatment.
Tuberculosis	143	221	1,452
Leprosy	2	3	345
Malaria	122	13	154
Typhoid fever	94	18	73
Diphtheria	69	12	18
Scarlet fever	26		10
Measles	146		80
Varicella	52		30
Tetanus in new born	8	7	1
Dengue	3		11
Filariasis			2

ECUADOR.

Yellow Fever.

The following statement was received from Passed Asst. Surg. Parker at Guayaquil:

Yellow fever in Ecuador during the month of April, 1912.

City or town.	Previously existing	New cases.	Died.	Remaining.
Guayaquil:				
Apr. 1 to 15	19	29	12	14
Apr. 15 to 30	14	26	11	15
Duran:				
Apr. 1 to 15	1	1	....	1
Apr. 15 to 30	1	....	....	1
Yaguachi:				
Apr. 1 to 15	1	....	....	....
Apr. 15 to 30	....	2	....	1
Milagro:				
Apr. 1 to 15	1	4	3	1
Apr. 15 to 30	1	3	3	....
Naranjal:				
Apr. 1 to 15	1	....	....	....
Apr. 15 to 30	....	....	....	....
Naranjito:				
Apr. 1 to 15	....	4	2	2
Apr. 15 to 30	2	3	2	2
Huigra:				
Apr. 1 to 15	1	....	....	....
Apr. 15 to 30	....	....	....	....

EGYPT.

Cairo—Typhus Fever.

Consul Knabenshue reports the occurrence of 14 deaths from typhus fever at Cairo during the two weeks ended April 29, 1912.

GREECE.

Cerebrospinal Meningitis.

Consul General Gale at Athens reports: During the week ended May 18 cerebrospinal meningitis was reported in 26 localities in Greece, with 78 cases. Of these cases 12 were reported in Athens and 3 in Piræus.

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports as follows relative to cholera and plague in Calcutta:

Cholera.—Week ended April 6, 1912, 73 deaths; week ended April 13, 98 deaths; week ended April 20, 95 deaths.

Plague.—Week ended April 6, 1912, 129 deaths; week ended April 13, 148 deaths; week ended April 20, 174 deaths.

In all Bengal plague was reported as follows: Week ended April 6, 2,336 cases with 2,085 deaths; week ended April 13, 2,709 cases with 2,396 deaths; week ended April 20, 1,713 cases with 1,503 deaths.

In all India plague was reported as follows: Week ended April 6, 12,118 cases with 10,562 deaths; week ended April 13, 13,490 cases with 11,305 deaths; week ended April 20, 11,551 cases with 9,914 deaths.

ITALY.

Examination of Emigrants.

Surg. Geddings at Naples reports:

Vessels inspected at Naples, Messina, and Palermo week ended May 18:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 14	Mongibello	New York			
15	Carpathia	do			
16	Calabria	do	347	45	520
18	Luisiana	do	1,103	110	1,250
18	Venezia	do	967	145	1,520
	Total		2,417	300	3,290

MESSINA.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 13	Carpathia	New York			
16	Mongibello	do			

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 14	Carpathia	New York			
15	Laura	do			
16	Fratelli Bianchi	do			
17	Luisiana	do	47	80	50
17	Calabria	do	217	160	100
	Total		264	240	150

KOREA.

Smallpox.

During the period from January 1 to April 30, 1912, smallpox was reported in Korea as follows:

Province.	Cases.	Remaining Apr. 30.
Keijo-fu (Seoul)	8	4
Kiung Ki	67	19
South Choong Chung		
North Choong Chung		
South Chunla		
North Chunla	2	
South Kiung Sang	2	
North Kiung Sang	2	
Kang Won	11	3
South Ham Kiung	6	3
North Ham Kiung	25	
South Pyeng An	172	31
North Pyeng An	521	206
Whang Hai	26	16
Total	842	272

MEXICO.

Manzanillo—Prevailing Diseases—Sanitary Conditions.

Acting Asst. Surg. Morgenstern reports: For the year 1910 the death rate at Manzanillo was about 37 per 1,000 inhabitants. The most common causes of death were malarial fever, with 22 deaths, pneumonia with 18, pernicious malarial fever with 12, tetanus with 3, yellow fever with 5. For the year 1911 the death rate was about 33 per 1,000. Malaria caused 22 deaths, pneumonia 16, pernicious malarial fever 13, dysentery 2.

Smallpox is quite prevalent. Malarial fevers are endemic, appearing in all forms. Mosquitoes are numerous. The estimated population of Manzanillo is 1,500.

Yellow Fever at San Juan Bautista, Tabasco.

The American consul at Frontera reports: A new case of yellow fever was reported at San Juan Bautista June 9.

Recent reports show that there have been in all at least 12 cases of yellow fever at San Juan Bautista. The first discovered case was in a boy who had not been out of the town for two years.

TURKEY IN ASIA.

Smyrna—Typhus Fever.

Consul Horton reports the occurrence of 1 death from typhus fever during the week ended April 20, and 1 during the week ended May 4, 1912.

VENEZUELA.

Summary of Yellow Fever.

Acting Asst. Surg. Stewart at La Guaira reports as follows relative to yellow fever in Caracas and vicinity:

During the month of December, 1911, 7 deaths from yellow fever were reported in the city of Caracas, occurring in 3 sections of the city; in January, 1912, 4 deaths from yellow fever occurred in 2 sections of the city; and in February and March, 1912, 4 deaths each were reported, occurring in 3 sections of the city. A fatal case occurred in Caracas during the week ended May 10, 1912, in which the infection was contracted in Macuto, a winter resort in the vicinity of the city. During the two weeks ended May 17, three other cases with 1 death occurred at Macuto. A fatal case was also reported there about April 1. During the months of April and May, 1912, yellow fever was reported in El Valle, a district in the vicinity of Caracas and at Guarenas, a town also situated near the city.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED JUNE 14, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State, and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy	June 3			Present.
Dutch East Indies:				
Celebes Island	Mar. 10[1]	5	2	
India:				
Bassein	Apr. 14-20	8	7	
Bombay	Apr. 28-May 4	9	5	
Calcutta	Apr. 7-20		266	
Madras	Apr. 28-May 4	3	1	Presidency, Apr. 1-30: Cases, 2,458; deaths, 1,523.
Moulmine	Apr. 14-20	6	6	
Rangoon	Mar. 1-31	39	38	
Indo-China:				
Saigon	Apr. 23-29	12	12	
Turkey in Asia:				
Adana	Apr. 16-29	53	23	
	Apr. 30-May 7	47	18	
	May 7-13	25	12	
Aleppo	May 12-18	2	1	

YELLOW FEVER.

Ecuador:				
Duran	Apr. 1-15	1		
Guayaquil	Apr. 1-30	55	23	
Milagro	do	7	6	
Naranjito	do	7	4	
Yaguachi	do	2		
Mexico:				
San Juan Bautista	June 9	1		
Venezuela:				
Caracas	May 4-10	1	1	
El Valle	Apr. 1-May 31			Present.
Guarenas	do			Do.
Macuto	May 3-17	3	1	

PLAGUE.

Chile:				
Iquique	Apr. 21-May 4	5	2	
China:				
Hongkong	do	273	235	
Egypt:				
Alexandria	Mar. 23-May 10	2	2	
Cairo	Mar. 26-May 14	2	1	
Provinces—				
Assiout	Apr. 24-May 14	22	14	
Assouan	do	11	12	
Beni Souef	Apr. 20-May 14	10	3	
Charkieh	Apr. 22-27	2	3	
Fayoum	Apr. 25-May 16	23	9	
Girgeh	Mar. 29-May 3	4	2	
Keneh	Apr. 25-May 14	26	15	
Minieh	Apr. 24-May 14	56	11	
India:				
Bombay	Apr. 28-May 4	128	105	
Calcutta	Apr. 7-20		451	
Karachi	Apr. 28-May 4	69	62	
Rangoon	Mar. 1-31	65	63	
Indo-China:				
Saigon	Apr. 23-29	4	3	
Java:				
Pasoeroean Residency	Apr. 14-20	5	5	
Turkey in Asia:				
Jiddah	Apr. 1-21	4	4	
Do	May 1-6	1		

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[1] Bulletin Quarantenaire d'Egypte, May 18, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended June 14, 1912.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Apr. 1-30		1	
Austria-Hungary:				
Bohemia	Apr. 28-May 11	3		
Galicia	do	9		
Upper Austria	do	1		
Canada:				
Niagara Falls	May 8-31	2		
Quebec	May 26-June 1	1		
Toronto	May 15-25	3		
China:				
Hongkong	Apr. 21-May 4	23	16	
France:				
Paris	May 5-18	8		
Germany				Total: May 5-11, 2 cases additional; May 12-18, 16 cases.
Hamburg	May 12-18	1		
Kehl	Apr. 1-30	1		
India:				
Bombay	Apr. 28-May 4	74	48	
Calcutta	Apr. 7-20		12	
Rangoon	Mar. 1-31	222	66	
Indo-China:				
Saigon	Apr. 23-29	2		
Italy:				
Naples	May 12-18	3		
Palermo	do	6	6	
Japan:				
Korea	Jan. 1-Apr. 30			Total, exclusive of Seoul, 843 cases.
Seoul	do	8		
Java:				
Batavia	Apr. 14-20	3	2	
Mexico:				
Juarez	May 26-June 1	1		
Mexico	Apr. 21-27	15	10	
Portugal:				
Lisbon	May 12-18	3		
Russia:				
Libau	May 6-12	1		
Moscow	Apr. 21-May 4	9		
Odessa	May 5-11	2		
St. Petersburg	do	8	7	
Spain:				
Barcelona	May 12-18	18	1	
Straits Settlements:				
Singapore	Apr. 14-20	1		
Turkey in Asia:				
Beirut	May 5-11	15		

REPORTS RECEIVED FROM DEC. 30, 1911, TO JUNE 7, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		200	In the Persian Gulf.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 7, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Bulgaria:				
Burgas	Nov. 22-23	2	2	Aug. 30-Sept. 6; 2 fatal cases from s. s. Episticia from Asia Minor, p. 1635, Vol. XXVI.
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	July 2-15, 1911: Cases, 5; deaths, 4, p. 1300, Vol. XXVI.
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, Vol. I.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-Apr. 13	140	112	
Bombay	Apr. 7-27	22	17	
Calcutta	Nov. 5-Mar. 30		1,090	
Madras	Nov. 26-Apr. 27	556	452	Madras Presidency Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-Feb. 29: Cases, 18,367; deaths, 11,563.
Moulmine	Feb. 18-Apr. 13	27	24	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Mar. 31	143	124	
Indo-China:				
Saigon	Nov. 20-Apr. 22	1,809	1,267	And vicinity.
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands				Third quarter, 1911: Manila, 1, fatal case; Provinces, 27 cases and 22 deaths. Fourth quarter, 1911: Manila, no case and no death: Provinces, 22 cases, 20 deaths.
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 96; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Apr. 20		1,775	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Biserta district	Nov. 25-Dec. 5	9	15	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 7, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2-Apr. 15	81	35	
Aleppo	Jan. 26-Apr. 20	46	29	
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14-26	29		
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Bahia	Mar. 23-25		1	
Ceara	Jan. 1-Feb. 29		5	
Manaos	Nov. 19-May 4		68	
Para	Mar. 3-9	2	2	Dec. 9-16: 1 fatal case.
Pernambuco	Jan. 1-Apr. 15		29	Apr. 2: Epidemic.
Rio de Janeiro	Mar. 17-Apr. 30	4	3	
Canal Zone:				
Culebra Island quarantine				In January 1 case from a vessel from Guayaquil. Mar. 2-4, 1 fatal case from s. s. Chile from Guayaquil.
Chile:				
Tocopilla	Apr. 11	90	25	And vicinity. Apr. 20: Still present.
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Apr. 15	14	6	
Guayaquil	Nov. 16-Apr. 15	147	66	
Huigra	Feb. 1-29.	1		
Milagro	Feb 1-Apr. 15	16	7	
Naranjito	do	6	4	
Yaguachi	Feb. 1-29	1		
Great Britain:				
Liverpool	May 14-18	1		Convalescent on s. s. Gladiator from Cabdello, detained at Port Sanitary Hospital.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida				Total Aug. 1, 1911-May 25, 1912: Cases, 67; deaths, 31.
Puerto Mexico (Coatzacoalcos).	Feb. 28-May 25		2	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
San Juan Bautista	May 11-25	5	1	
Temax	Dec. 31-Jan. 6	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 7, 1912.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-Mar. 31	30		Dec. 1-30, 10 deaths, and Jan. 15-Mar. 31, 12 deaths, including previous reports.
La Guaira	Mar. 17-Apr. 1	2	2	
Macuto	Mar. 16-19	1	1	
Maiquetia	Feb. 24-Apr. 30	4	4	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
Barbados—				
Bridgetown	Apr. 27	1	1	From steamship Francis, from Para.
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Arabia:				
Aden	Mar. 5-25	2	1	
Azores:				
Fayal	Jan. 10			Still present.
Teceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Apr. 20	24	15	
Pernambuco	Oct. 1-Feb. 29		9	
Rio de Janeiro	Nov. 12-Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12-Apr. 6	24	11	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Chaochowfu	Mar. 10-Apr. 13			Present.
Hongkong	Dec. 9-Apr. 20	244	212	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1,817; deaths, 1,324. Dec. 31-Mar. 2: Cases, 99; deaths, 95.
Provinces—				
Kediri	Jan. 1-Mar. 2	25	24	
Madiven	do	53	49	
Pasoeroean Residency, Malang District.	Nov. 12-Apr. 13	152	104	
Soerabaya	Oct. 17-27	2		
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Reports not available because of revolution.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Alexandria	Mar. 22	1	1	
Cairo	Apr. 22-25	2	1	
Provinces—				
Assiout	Jan. 1-Apr. 24	62	40	Sept. 11-16: Cases, 50; deaths, [illegible].
Assouan	do	31	19	
Behera	Jan. 1-Apr. 15	5	3	Sept. 11-16: Cases, 11; deaths, [illegible]
Beni Souef	Feb. 16-Apr. 20	30	9	
Fayoum	Jan. 1-Apr. 24	3	1	
Galioubeh	Jan. 1-Apr. 23	5	3	Oct. 5-Dec. 26: Case, 1.
Garbieh	Jan. 1-Apr. 24	24	8	
Carchieh	Apr. 21-22	6	4	
Girgeh	Mar. 28	1	1	
Kena	Jan. 1-Apr. 25	96	73	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2-Apr. 23	9	2	
Minieh	Jan. 1-Apr. 23	26	6	Dec. 13: Case, 1.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 7, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Great Britain:				
Liverpool	Apr. 27-30	1	1	In the Royal Southern Hospital, from s. s. Italian Prince, which arrived at Liverpool Apr. 19, laden with fruit and grain from Mediterranean ports.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-Apr. 27	1,061	878	
Calcutta	Nov. 11-Mar. 31		402	
Karachi	Nov. 26-Apr. 27	994	860	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Mar. 31	231	221	
Bombay Presidency and Sind.	Oct. 29-Apr. 20	60,836	44,849	
Madras Presidency	do	10,450	8,094	
Bengal	do	41,919	35,690	
Babar and Orissa	Apr. 1-20	6,758	5,984	
United Provinces	Oct. 29-Apr. 20	108,195	97,121	
Punjab	do	21,693	16,416	
Burma	do	1,637	1,499	
Eastern Bengal and Assam.	Jan. 1-Feb. 24	2	2	
Central Provinces	Oct. 29-Apr. 20	29,564	23,436	
Coorg	Oct. 29-Mar. 23	88	52	
Mysore State	Oct. 29-Apr. 20	8,809	6,819	
Hyderabad State	do	27,569	24,851	
Central India	do	9,769	7,948	
Rajputana and Ajmere Merwara.	do	2,046	1,641	
Kashmir	Feb. 3-Apr. 20	331	164	
North West Province	Oct. 29-Apr. 20	4	3	Total for India, Oct. 29-Mar. 20: Cases, 329,670; deaths, 274,569. Total year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Apr. 22	69	19	
Japan:				
Formosa	Mar. 7 Apr. 20	92	74	
Kobe	May 8	1	1	From s. s. Panama Maru, from Hongkong.
Nagasaki	Apr. 20	1		On the s. s. Tacoma Maru, from Hongkong and Shanghai.
Mauritius	Nov. 3-Mar. 28	109	66	
Persia:				
Bushire	Feb. 4-Apr. 13	322	219	
Mohammerah	Apr. 3	1		
Reshire	Feb. 6	2		
Peru:				
Departments—				
Callao	Oct. 1-21	1		City, in November, 1 case; in January, 3 cases with 2 deaths; Mar. 1-26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Apr. 10, 22 cases in the lazarette at Trujillo. Apr. 22 still present.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Manila				Apr. 6, a fatal case of pneumonic form in a member of the crew on s. s. Zafiro, arrived Apr. 4 from Hongkong.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on p. 2098, Vol. I.
Senegal	May 29			Present.
Siam:				
Bangkok	Nov. 4-Mar. 23		5	
South Africa:				
Durban				Total: Jan. 14-Apr. 19, cases 27, deaths 22.
Straits Settlements:				
Singapore	Nov. 5-Apr. 13	31	27	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 7, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia:				
Basra				Feb. 13, a fatal case in a stoker on s. s. Nicomedia from Bushire.
Jiddah	Jan. 13–Mar. 27	16	9	Apr. 10–12, 3 cases from s.s. Adalia from Newcastle.
Venezuela:				
Caracas	Mar. 12–Apr. 22	6	2	
West Indies:				
Grenada	May 2–7	1	1	
Trinidad	Apr. 2–May 1	6	4	
At sea	Mar. 1–11	1	1	On s. s. Macedonia from Bombay to Aden.
Do	Apr. 1	1	1	Pneumonic on s. s. Loongsang en route from Hongkong to Manila.

SMALLPOX.

Algeria:				
Algiers	Nov. 1–30		1	
Oran	Jan. 1–31	2	1	
Arabia:				
Aden	Nov. 28–Apr. 22	23	11	And vicinity.
Argentina:				
Buenos Aires	Jan. 1–31		2	Oct. 1–31, 6 deaths. No deaths in November or December, 1911.
Rosario	Oct. 1–Feb. 29		41	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14–20	2		
Budapest	Jan. 4–10	25		
Galicia	Dec. 24–Apr. 13	30	1	
Krain	Jan. 14–20	7		
Trieste	Dec. 3–Apr. 6	2		From s.s. Baron Call from Beirut.
Tyrol	Jan. 14–Mar. 9	3		
Vienna	Mar. 25–30	1		
Brazil:				
Bahia	July 1–31		1	
Para	Mar. 24–May 4	10	5	Case Mar. 30 from Alagoas.
Pernambuco	Oct. 1–Apr. 15		838	
Rio de Janeiro	Nov. 26–Apr. 20	32	1	
Santos	Dec. 12–23		1	
British East Africa:				
Mombasa	Mar. 1–31	5		
Canada:				
British Columbia—				
Fernie	Feb. 26–May 25	6		
Nelson	Dec. 24–30	1		
Vancouver	Apr. 14–20	1		
Victoria	Feb. 4–10	1		
Vinal Haven	May 17	7		5 miles from Eastport, Me.
Manitoba—				
Winnipeg	Jan. 14–Apr. 20	4		
New Brunswick—				
Summerstown	Apr. 12			Epidemic; 10 miles from Cornwall.
Nova Scotia—				
Halifax	Mar. 24–Apr. 6	2		
Ontario—				
Hamilton	Apr. 14–27	16		
Kingston	Dec. 19–23	1		
Ottawa	Dec. 10–May 25	106	1	
Sarnia	Oct. 17–Mar. 23	43		
Toronto	Jan. 6–Apr. 20	5	1	
Windsor	Feb. 4–Mar. 16	8		
Quebec—				
Montreal	Dec. 17–May 25	34		
Quebec	Dec. 10–May 25	299	2	
Yukon—				
Dawson	Apr. 1–6	1		
Ceylon:				
Colombo	Nov. 12–Apr. 13	4		And vicinity.
Chile:				
Iquique	Dec. 10–Mar. 16	4	2	
La Serena	Nov. 21–30	14		
Santiago	Nov. 1–30	685	343	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 7, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Chile—Continued.				
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Apr. 13	70		
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chaochowfu	Mar. 30			Present.
Chenghai	Jan. 29-Apr. 13			Do.
Chungking	Nov. 18-Apr. 20			Do.
Dalny	Mar. 3-Apr. 6	11	2	
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-Apr. 20	722	531	
Kityang	Jan. 21-Apr. 13			Do.
Nanking	Dec. 10-May 11			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12-Apr. 13	60	17	
Egypt:				
Cairo	Dec. 10-Apr. 29	16	2	
Port Said	Jan. 30-Feb. 4	1		
France:				
Havre	Mar. 10-16		4	
Marseille	Jan. 1-Apr. 30		7	Nov. 1-30, 1 death.
Paris	Dec. 3-May 4	125	2	
Germany				Total, Dec. 31-May 11; cases, 169.
Hamburg	Jan. 21-Apr. 27	7		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bradford	Apr. 28-May 4	1		
Bristol	Jan. 29-May 18	4		
Liverpool	Mar. 17-Apr. 17	2	1	Case Apr. 13, an American from the s. s. Arabic.
London	Jan. 14-Apr. 20	10	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-Mar. 9	2		
India:				
Bombay	Nov. 19-Apr. 27	1,118	532	
Calcutta	Nov. 19-Mar. 30		37	
Karachi	Apr. 1-6	1	1	
Madras	Nov. 26-Apr. 27	211	83	
Rangoon	Oct. 1-Mar. 31	442	121	
Indo-China:				
Saigon	Nov. 13-Apr. 22	55	11	
Italy:				
Genoa	Dec. 1-Apr. 15	47	2	
Leghorn	Dec. 16-May 11	113	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-May 11	106	1	
Palermo	Nov. 26-May 22	2,661	904	
Rome	Jan. 1-Mar. 31	31	3	
Turin	Jan. 15-May 12	3		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Formosa	Mar. 3-Apr. 20	4		
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-May 7	3	2	Jan. 20, I case from s. s. Suverio from Hongkong; Jan. 28, 1 case from Shingo Maru. Fatal case May 7 from s. s. Manchuria from Shanghai.
Nagasaki	Feb. 12-18	1		
Nogahama	Mar. 17-23	1		On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-May 11	9	5	
Juarez	Dec. 19-May 25	21	6	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June. 7, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
Magdalena	Dec. 23-Mar. 12	91	50	Mar 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-May 21		17	
Mexico	Nov. 26-Apr. 20	301	144	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	Mar. 23, present in vicinity.
San Antohio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
San Juan Bautista	May 25	2		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Mar. 23	8	8	
Tampico	Dec. 1-Apr. 10		16	
Tapachula	Nov. 1-May 4		19	
Philippine Islands				Third quarter, 1911: Manila, 9 cases; no deaths. Fourth quarter; 1911: 38 cases.
Manila (on arriving vessel)				Apr. 1 to 6, present on the steamers Serantes and Sotolongo; Apr. 2-9, 8 cases among the crew of the United States Army transport Warren, from ports in China and Japan.
Portugal:				
Lisbon	Dec. 9-May 11	67		
Roumania	Jan 1-31	2,935	143	Total: Jan. 1-Feb. 29, cases, 5,847; deaths, 247.
Russia:				
Batum	Dec. 1-Mar. 31	2		
Libau	Dec. 17-Apr. 28	3		
Moscow	Nov. 19-Apr. 20	75	10	
Odessa	Nov. 26-Apr. 27	37	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-May 11	71		Oct. 1-Jan. 31: Deaths, 10.
St. Petersburg	Nov. 19-Apr. 27	281	54	
Warsaw	Nov. 5-Mar. 30	437	207	
Siam:				
Bangkok	Nov. 5-Apr. 20		2,281	
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-Apr. 6	5		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Almeria	Apr. 1-30		1	
Barcelona	Feb. 6-May 13		4	
Cadiz	Nov. 1-Apr. 30		31	
Madrid	Dec. 1-Mar. 31		16	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-Apr. 30		12	
Valencia	Dec. 3-May 11	435	18	
Straits Settlements:				
Penang	Feb. 11-17	1		
Singapore	Nov. 19-Apr. 6	38	15	
Switzerland:				
Cantons—				
Aargau	Apr. 7-13	1		
Oberwalden	Jan. 14-20	1		
St. Gall	Mar. 30-Apr. 6	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Apr. 13		54	
Turkey in Asia:				
Beirut	Dec. 3-May 4	1,545	107	
Turkey in Europe:				
Constantinople	Dec. 4-May 12		216	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Apr. 30	15	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aden	Apr. 29	45,859	19	3									1	
Do	May 13		19	4									1	
Aguascalientes	May 26	40,000	83	4							1		10	
Aix-la-Chapelle	May 4	157,719	58	6							1			1
Do	May 11	157,741	54	2								2		2
Aleppo	May 18	200,000				1								
Amsterdam	May 11	582,621	120	17									4	1
Do	May 18		132	22									4	1
Antwerp	May 11	316,604	65	9								1	2	
Asuncion	Mar. 9	75,000	20	4						1		1		
Do	Mar. 23		19	1						2				
Do	Mar. 30		40	2						1				
Do	Apr. 6		29	3						2		1		
Do	Apr. 13		24	2						1				
Do	Apr. 27		26	1						2				
Athens	May 11	250,010	118	24									1	
Do	May 18		104	23								1	2	
Barcelona	do	591,272	152	14				1		4		1		
Barmen	May 4	171,000	46	6								2	5	
Do	May 11		28	5									2	
Batavia	Apr. 20	217,630	10					2	1					
Belfast	May 18	385,492	138	30							1	2	4	
Beirut	May 11	80,000	20	2						2				
Bergen	May 18	87,749	18	3								1		
Berlin	May 11	2,071,414	507	81							2	6	3	5
Birmingham	May 18	842,512	204							1		3	3	
Bombay	May 4	979,445	811	65	105	5				48			3	
Bordeaux	May 18	253,000	88	8						1			11	
Bremen	May 11	246,850	77	9							2	3	3	1
Do	May 18		75	8							1	6	1	1
Brunswick	May 11 May 18	145,000		7							14	19		
Brussels	May 18	739,684	205	21						1	1	3	6	
Budapest	May 4	1,000,000									2	1		1
Do	May 11									1	5	3		
Do	May 18										2	1	3	
Calcutta	Apr. 6	890,493	564	48	129	73		2					1	
Do	Apr. 13		599	28	148	98		4					4	
Do	Apr. 20		615	34	174	95		6					2	
Catania	May 24	207,000	78	7					4			4		
Coburg	May 11	24,174	12	2								1		
Do	May 18		12								1			1
Chemnitz	May 11	303,500	79	5						1		1		1
Christiania	May 18	245,000	60	3							1	1		
Cologne	May 11	528,738	168	23								3		
Do	May 17		152	27							1		1	
Colombo	Apr. 27	227,026	120	17						2				
Constantinople	May 19	1,300,000	240	26				10		5	3	2	6	
Dalny	Apr. 27	45,693	15	1							1			
Do	May 4		15	2							3			
Dresden	May 11	557,800	172	23								1	3	1
Dundee	May 18	171,006	54	5									5	2
Do	May 25		45									2	1	4
Durban	Apr. 20	69,165	14	5						1				
Edinburgh	May 18	321,200	94										7	3
Frankfort-on-Main	May 4	425,000	103									1	1	2
Do	May 11		97									1		1
Genoa	May 15	272,077	138											
Georgetown	May 18	57,577	56	4						2				
Ghent	May 11	166,235	48	7								1		
Glasgow	May 24	785,600	264							2		2	7	
Gothenberg	May 11	170,100	33	7								1		2
Hongkong	Apr. 27	336,488			113			12		2				
Hull	May 18	282,987	91							1			1	1
Kharput	Apr. 20	21,000								1			1	
Iquique	Apr. 27	40,000		8						2				
Karachi	May 4	157,290	124		62								7	
Kingston	May 18	57,379								4				
Kobe	May 12	418,646	118					1				1		

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Konigsberg	May 11	252,200	89	10								1		2
Leeds	May 18	445,568	116	13									1	1
Leipzig	May 11	605,755	163	17										2
Leith	May 18	81,000	35	4									3	2
Libau	May 12	84,000								1	1			
Do	May 19										3			
Liege	May 11	166,349	50	7						1			2	
Do	May 18	166,636	51	9						2				2
Liverpool	May 25	752,055	246	13								1	32	6
Lubeck	May 18	100,000	30	5										1
Madras	May 4	518,660	315					3			1		4	
Manchester	May 18	714,427	229	17						1	1		19	8
Mannheim	May 4	201,463	43	11									1	
Mexico	Apr. 27	719,052	468	28				10	6			1	6	5
Monterey	May 26	100,000	72	4						3	1			
Montreal	June 1	466,197	173	30						1	1	2		
Moscow	Apr. 27	1,617,157	871	110						1	15	10	15	
Do	May 4		869	96				2	5	2	12	3	9	9
Munich	May 11	610,000	206	28						1		3	2	
Nagasaki	May 5	179,257	26	4						1				
Nagoya	May 4	426,968	140									2		
Nantes	May 12	170,535	59	19						1				
Newcastle on Tyne	May 18	269,193	78							1		2		1
Niagara Falls	May 14	4,244								1				
Nottingham	May 18	260,000	67	4						1		1	1	1
Nuremberg	Apr. 27	344,797	107	22									1	1
Do	May 4		106	16									3	
Palermo	May 18	340,000	128	6				6		3	2		1	1
Paris	May 11	2,888,110	986	275						5	5	3	40	
Do	May 18		1,002	236						4	6	8	31	
Penang	Apr. 27	102,167	90	12						1				
Port of Spain	May 11	60,000	29	4						3			2	
Prague	..do	225,817	95	20									1	1
Rangoon	Apr. 30	293,316	208		12	7		11						
Do	Apr. 27	293,316	203		18	6		16						
Rotterdam	May 18	438,774	83									1		
Saigon	Apr. 29	220,000	15		3	12								
St. Johns, Newfoundland	May 25	33,000									1			
Do	June 1										1			
St. Petersburg	May 11	1,907,708	958	130				7	1	8	11	9	29	[illegible]
Shanghai	Apr. 28	500,000	153	22							5		11	
Do	May 5		131	20							8	3	9	
Do	May 12		164	30							2	2	17	
San Luis Potosi	Mar. 30	82,946	56	5						3		1		
Singapore	Apr. 20	303,328	215	26						1				
Southampton	May 25	120,896	33	3									2	
Stettin	May 11	240,000	71	11								1		
Stockholm	..do	346,599	110	18							1		5	1
Stoke-on-Trent	May 18	237,153	61	5								1	1	1
Talcahuana	May 4	28,000		2										2
Tientsin	..do	465,000	27	9					1					
Trieste	May 11	235,999	112	3					1		1			
Tripoli	May 12	50,000	58	3					1	3				
Do	May 19		62	4						6				
Toronto	May 18	392,000	118	7							2	3	2	3
Do	May 25		131	18						1		3	1	2
Valencia	May 18	235,000	94	11				1			1		1	
Vancouver	..do	110,000	21	2								1		
Vera Cruz	May 25	32,000	40	7										
Vienna	May 4	2,081,335	637	104						1	5	5	20	3
Winnipeg	May 25	151,958	51	4							2			
Yokohama	May 13	444,039								1		1		

MORTALITY—FOREIGN AND INSULAR COUNTRIES AND CITIES (Untabulated).

Algeria—*Algiers.*—Month of April, 1912. Population, 172,397. Total number of deaths from all causes 335, including diphtheria 3, measles 2, smallpox 1, tuberculosis 46, typhoid fever 5.

Australia—*Newcastle.*—Month of March, 1912. Population, 56,200. Total deaths from all causes 47, including tuberculosis 1, typhoid fever 3.

British Burma—*Rangoon.*—Month of March, 1912, Population, 293,316. Total number of deaths from all causes 869, including cholera 38, plague 63, smallpox 66, tuberculosis 30, typhoid fever 3.

Chile—*Punta Arenas.*—Month of March, 1912, Population, 10,103. Total deaths from all causes 37, including tuberculosis 2.

France—*St. Etienne.*—Two weeks ended April 30, 1912. Population, 148,778. Total number of deaths from all causes 130, including diphtheria 1, tuberculosis 23.

Germany—*Strassburg.*—Month of April, 1912. Population, 182,426. Total deaths from all causes 235, including diphtheria 4, measles 2, tuberculosis 39, typhoid fever 2.

Great Britain.—Week ended May 11, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 14.2 per 1,000 of the population, which is estimated at 17,639,816.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 19.9 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Dundalk, viz, 4, and the highest at Drogheda viz, 42 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 15.9 per 1,000 of the population, which is 2,182,400. The lowest rate was recorded at Partick, viz, 8.4, and the highest at Ayr, viz, 23.3 per 1,000. The total number of deaths from all causes was 665, including diphtheria 3, measles 23, scarlet fever 5, typhoid fever 1.

Guam.—Month of March, 1912. Population, 9,000. Total number of deaths from all causes 23, including tuberculosis 23. Two hundred and nineteen cases of hookworm disease were reported.

Hawaii—*Hilo.*—Two weeks ended April 27, 1912. Population, 3,500. The deaths include typhoid fever 1.

Honolulu.—Two weeks ended April 27, 1912. Population, 39,306. Total number of deaths from all causes 47, including tuberculosis 6, typhoid fever 2, pneumonia 9, tetanus 1.

Jamaica—*Kingston.*—Month of April, 1912. Population, 50,000. Total number of deaths from all causes 152, including tuberculosis 14, typhoid fever 4.

MALTA.—Month of April, 1912. Population, 215,395. Total number of deaths from all causes 334, including measles 10, tuberculosis 21.

NEW ZEALAND.—Month of February, 1912.

Auckland.—Population, 104,728. Total number of deaths 54, including diphtheria 1, typhoid fever 1.

Christchurch.—Population, 82,004. Total number of deaths 33, including typhoid fever 1, tuberculosis 3.

Dunedin.—Population, 65,690. Total number of deaths 39, including typhoid fever 1, tuberculosis 7.

Wellington.—Population, 71,427. Total number of deaths 38, including diphtheria 1, tuberculosis 6.

PANAMA—*Panama.*—Month of April, 1912. Population, 30,000. Total number of deaths from all causes not reported. The deaths include tuberculosis 15, malaria 3, pneumonia 6.

SOUTH AFRICA—*Johannesburg.*—Six weeks ended May 4, 1912. Population, 237,220. Total number of deaths from all causes 540, including diphtheria 1, measles 18, scarlet fever 1, tuberculosis 64, typhoid fever 16.

SPAIN—*Huelva.*—Month of April, 1912. Population, 28,982. Total deaths from all causes 94, including measles 16, tuberculosis 13.

TURKS ISLANDS.—Three weeks ended May 11, 1912. Population, 1,681. Total number of deaths from all causes 4. No deaths reported from infectious diseases.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS

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DIPHTHERIA IN MANILA.

By CARROLL FOX, Passed Assistant Surgeon, Public Health and Marine-Hospital Service, Assistant Director of Health, Philippine Islands.

A perusal of the morbidity and mortality reports for the city of Manila would indicate that diphtheria is increasing, as cases have been reported as follows:

Fiscal year.	Cases.	Deaths.	Fiscal year.	Cases.	Deaths.
1900	1	1	1906	8	8
1901	0	0	1907	15	13
1902	4	4	1908	18	9
1903	2	2	1909	7	6
1904	4	4	1910	28	10
1905	7	7	1911	25	16

It will be seen that there is almost a steady increase in the number of cases and deaths reported.

Previous to the American occupation there are no records, but physicians state that they know of very few cases during Spanish times. It was undoubtedly present, however, and in addition to this original infection, it has been introduced from time to time by sailors arriving on the naval vessels or soldiers on the transports, and while these cases have always been isolated, yet there must have been a certain number of bacillus carriers disembarked at the same time, and, as in many other diseases, the bacillus carrier is more dangerous to the community than the person actually suffering with the disease. It is also very probable that the physicians of the city are making more accurate diagnoses, and it is unquestionably true that the Bureau of Health, without the grave epidemics of cholera and smallpox which it has had previously to combat, is now able to devote more time to other diseases, and therefore more cases of diphtheria are being located.

From the end of the fiscal year (June 30) 1911 to date (April 2, 1912) there have been reported in the city of Manila 39 cases with 12 deaths, which is a case fatality of 30.77 per cent. This fatality rate is altogether too high, considering that diphtheria antitoxin was used in all but 2 cases, which were reported only after death. But, for the reason that so many of the indigent sick never call for the services of a physician, many cases are only discovered and brought to the hospital in an advanced stage of the disease, and it is not surprising that antitoxin does not have the effect that it would were they reported promptly and early. It is not unusual to see the patient for the first time when the membrane has practically disappeared and death is approaching from a complication. The character and severity of the symptoms do not differ from diphtheria found in the United States. The types in Manila have been mostly pharyngeal, with an occasional case where the membrane has been located in the larynx, and once where the membrane was found in the nose, complicating the pharyngeal type.

It is interesting to note that since instituting exact methods in the diagnosis and control of the disease there have been 25 diphtheria bacillus carriers found among the contacts. Bacillus carriers are always isolated in the communicable-disease hospital, as are cases of the disease itself, and are detained in the hospital until two successive negative cultures have been obtained. In no instance has a bacillus carrier developed the disease.

From the standpoint of public health, bacillus carriers may be considered as of three classes: In the first place, the person who is harboring bacilli after having had the disease; in the second place, the person who becomes a bacillus carrier by reason of being in contact with a known case of diphtheria; thirdly, the person who by reason of being a carrier has been the cause of a case of diphtheria.

The first class is easy to control, because the patient is not discharged from the hospital until bacteriological examination discloses that the bacilli have disappeared. The second is not difficult to control, because prompt bacteriological examination of the throat of the contact, immediately after finding a case of diphtheria and again five days thereafter, will determine whether the contact be a bacillus carrier. The individuals in the third class, however, are not discovered until they have infected others and are usually not known to be present until an actual case of diphtheria has developed.

From experience in Manila carriers have been found to harbor the bacilli as long as 18 days after being admitted to the communicable disease hospital, while the longest time that a case of diphtheria in San Lazaro Hospital has harbored the bacillus after clinical symptoms have disappeared has been 28 days.

In the belief that the amount of diphtheria was increasing, the bureau of health thought it better to draw up a more complete set of regulations to govern the actions of its medical officers in dealing with this condition. These regulations follow.

In addition to these regulations there was also issued a blank form to be filled in by the bureau of health medical officer reporting the case and by the bureau of health medical officer at the communicable-disease hospital having it in charge, the idea being that for each case there would be a complete scientific report which could be used at any future time for study or statistical purposes. The blank form used for the purpose also follows.

While every case of diphtheria is treated by the administration of antitoxin, contacts, even though bacillus carriers, are not given the serum unless they request it, for the reason that it does not affect the life of the bacillus, and as there is no toxin to overcome in the bacillus carrier, there is no effect from the antitoxin. In addition to this there is the danger, though remote, of the sudden death which sometimes follows the administration of a serum; the possibility of the first dose sensitizing the individual to a second dose; and the short period of immunity produced. And where the carrier is isolated and kept under close observation the antitoxin can be administered at the first appearance of symptoms with as good results accruing to the patient as if a prophylactic dose had been given. Antiseptics, applied locally, are invariably used.

REGULATIONS GOVERNING THE ACTIONS OF THE MEDICAL OFFICERS OF THE BUREAU OF HEALTH IN CASES OF DIPHTHERIA FOUND IN THEIR DISTRICTS.

1. If the condition is suspicious of being diphtheria, swabs shall be taken immediately from the throat and sent to the bureau of science for examination. If the bacteriological report is positive, the case shall immediately be sent to San Lazaro.

2. Immediately upon finding a case positive for diphtheria, swabbings shall be taken from the throat of all contacts and sent to the bureau of science for examination. If the report upon any contact comes back positive, that contact shall be sent to San Lazaro for isolation. Where the results of bacteriological examination of a contact are negative, another swabbing from the throat shall be taken five days afterwards.

3. Any contact desirous of receiving a prophylactic dose of antitoxin may be sent to San Lazaro, where the treatment will be given.

4. Persons are to be sent to San Lazaro only when they have diphtheria, when the bacilli have been found in the throats of apparently healthy persons (bacillus carriers), or when they desire to take a prophylactic dose of antitoxin.

5. In every case in which diphtheria is discovered in a child the school history of such child shall be carefully investigated, and, if necessary, cultures taken from the throats of the pupils who have been in the same room with the patient or other close contacts.

6. Inmates of houses in which a case of diphtheria has been found, even though they are not proven to be bacillus carriers, shall be inspected from time to time until the period of incubation has terminated, or for seven days from the time the house was disinfected.

7. Hereafter swabs for making cultures will be obtained from the bureau of health. Each swab will be furnished in a sealed, sterile test tube without any culture media. After swabbing the throat the swab must be immediately placed in the sterile test tube, the cotton plug inserted, and without delay sent to the bureau of science, where the necessary culture will be made.

In the event that tubes with culture media are used, care must be taken thoroughly to spread the material on the swab over the surface of the media. Do not break the surface of the media in any way. Do not allow the swab to touch anything but the throat of the patient and the surface of the culture media. The swab must be thoroughly sterilized before it is discarded.

8. Attention is called to the fact that domestic animals, especially the cat, have been found to harbor diphtheria bacilli in their throats, and, therefore, special investigation along this line is suggested.

9. Cases of diphtheria or bacillus carriers shall be held in San Lazaro until two negative bacteriological findings, on separate days, are reported from the bureau of science.

10. Immediately after the removal of a case of diphtheria or a bacillus carrier the room or rooms in which the person has lived shall be disinfected, together with all articles liable to be contaminated by the secretions from the patient's throat or nose.

11. For every case of diphtheria and for each bacillus carrier a blank bureau of health form shall be filled out with the information required thereon, and as soon as practicable it shall be transmitted to the chief, San Lazaro Hospital division, who will fill in his part and send it to the bureau of health. This form shall be in addition to the transfer slip which is now required for each case of dangerous communicable disease.

Diphtheria report.

Case of—
Diphtheria.
Diphtheria-bacillus carrier.} Cross out word not wanted.
Name.................................... Address....................................
Nationality............................ Age........ School..........................
Is the case positive clinically?..
Location of membrane...
Date of onset................................ Date found positive...........................
Date sent to hospital...
Where did patient probably contract infection?..
Have there been any other cases in house?..
How many inmates in house?........ How many contacts?..............................
Have you taken swabs from contacts?........ Results.....................................
How many have received prophylactic inoculation?......................................
Have any contacts developed the disease?..
Have there been any other cases in the school?..
Have you taken swabs from schoolmates of patient?....................................
How many?.............. Results...
Has disinfection of school been ordered?........ Has it been done?.................
Are there any pet cats or dogs in the house?...
Has the possibility of their carrying infection been investigated?...................
Results..
If a bacillus carrier, can the source of infection be traced?..............................

..............................,
Medical Inspector.

(To be answered by chief San Lazaro Hospitals Division.)

Treatment..
Number of antitoxin units used, with dates...
....
Severity of case.......................... Result...
Date of finding second negative culture...
Date of discharge........................ Number of days in hospital...................
How many days after clinical symptoms disappeared did patient harbor bacilli?......
....
If bacillus carrier, have any symptoms of diphtheria developed?......................
Has carrier ever had diphtheria?.......... When?..
Has carrier ever had tonsillitis or sore throat ....
How many contacts of case given prophylactic treatment?..............................
How many units per contact?...
Character of reaction from inoculation...
Is patient an asthmatic?..

..............................,
Chief San Lazaro Hospitals Division.

FIRST INTERNATIONAL CONGRESS ON COMPARATIVE PATHOLOGY.

The First International Congress on Comparative Pathology will be held at the Faculty of Medicine at Paris from October 17 to 23, 1912. The congress, the object of which is exclusively scientific, will bring together men of science interested in pathology in the widest acceptation of the word. Those promoting the congress desire interested scientists in the United States to participate. Communications should be addressed to the secretary general of the congress at Paris.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

HOLLAND, MICH.

SPITTING.

RULE 6. Spitting or expectorating upon the floors of any public building, street car, or public conveyance, or upon any sidewalk, crossing, entrance, or other public place, is a menace to the public health, and the ordinance relating thereto shall be strictly enforced by the police department of the city of Holland.

[Regulations, board of health, adopted Oct. 2, 1911.]

LITTLE ROCK, ARK.

PROTECTION OF FOODSTUFFS AND INSPECTION, SLAUGHTERING, HANDLING, CARE, AND SALE OF MEAT.

SEC. 1. That within 30 days after the passage of this ordinance, the mayor shall appoint a chief food inspector, who shall have power, and whose duty it is declared to be, to inspect all meat, milk, and other articles sold or offered for sale in the city of Little Rock. And the mayor shall also appoint such other inspectors as may be necessary, by and with the consent of the city council. Said inspectors shall be required to pass either the United States Government examination for food inspector or such other examination as the board of health may require, same to be conducted by the board of health.

SEC. 2. The term of office of the inspectors shall be one year, except that the same shall expire with the appointing mayor. The chief food inspector shall receive a salary of $100 per month, and the other inspectors shall receive $85 per month, payable monthly, out of the inspection fund hereinafter provided for, upon voucher properly drawn. Said inspectors may be discontinued by the mayor at any time, for insufficiency of inspection fund or other cause. All vacancies are to be filled by appointment by the mayor. Said inspectors shall enter into bond to the city of Little Rock, to be approved by the mayor and board of health, in the sum of $1,000 each, conditioned upon the faithful performance of duty.

SEC. 3. The board of health shall have general supervision over the inspections provided for in this ordinance, prescribing such regulations as will, in its judgment, most effectively carry out the objects of this ordinance.

SEC. 4. The board of health shall have power to provide a place or places for inspection of all cattle, hogs, sheep, goats, and other animals, the locations of same to be subject to the approval of the city council, and, in the name of the city, to enter into a contract for the necessary premises where such inspection may be done: *Provided*, Said contract shall not be for a longer time than one year, and shall be approved by the board of public affairs: *Provided further*, That the city shall exercise such supervision over such place or places as may be necessary to secure sanitary conditions: *Provided further*, That all persons, for the purpose of purchasing meats, hides, offal, or other products of the animals inspected, shall have free access to said premises at all times.

SEC. 5. For such inspection said inspectors shall collect the following fees: For grown cattle and yearlings, 25 cents each; for calves, hogs, sheep, goats, and other small animals, 15 cents each; and shall pay all funds derived therefrom over to the city collector, who shall place the same to the credit of the inspection fund. The inspector shall keep a record of all animals inspected by him, giving description, marks of identifications, and owner, and file same at the end of each month with the city collector.

SEC. 6. Warrants may be drawn on said inspection fund by order of the board of health for incidental expenses involved in carrying out the provisions of this ordinance.

SEC. 7. Said inspectors shall have power to enter any butcher shop, dairy, bakery, grocery store, fruit stand, cold-storage plant, hotel, restaurant, or any other premises for the purpose of inspection, and upon finding any article or articles which is in any way contaminated or unfit for consumption shall seize and destroy the same.

SEC. 8. For the purpose of carrying out the provisions of this ordinance the inspectors are empowered to make arrests and perform other duties of police officers, and shall wear police uniform and badges.

SEC. 9. Any person, firm, or corporation selling, offering for sale, or having in his, her, or its possession, with the intention of selling, as food, any uninspected meats, required by this ordinance or the order of the board of health to be inspected, or any person, firm, or corporation knowingly buying uninspected meats shall be deemed guilty of a misdemeanor, and upon conviction in police court shall be fined not less than $10 nor more than $25 for each and every offense. Any person, firm, or corporation selling, offering for sale, or having in his, her, or its possession for the purpose of selling any contaminated article of food shall be deemed guilty of a misdemeanor. and upon conviction in police court shall be fined not less than $10 nor more than $25.

SEC. 10. This ordinance shall take effect and be in force from and after its passage, and all ordinances in conflict herewith are hereby repealed in so far as they conflict.

[Ordinance No. 1706, adopted July 25, 1911.]

Regulations of board of health provided for in foregoing ordinance.

Regulation No. 1.

SEC. 1. *Establishments.*—This term shall mean any slaughtering, meat canning, salting, rendering, or any place where inspection is conducted or where meats or other foodstuffs are sold or offered for sale.

SEC. 2. *Little Rock inspected and passed.*—This phrase or any authorized abbreviation thereof shall mean that the carcasses, parts of carcasses, meat, or meat-food products so marked have been inspected and passed for food under ordinance 1706 and these regulations.

SEC. 3. *Little Rock inspected and condemned.*—This phrase shall mean that the carcasses, parts of carcasses, meat, or meat-food product so marked are unfit for human food and must be destroyed, as provided in regulation 5, section 1 and section 2.

SEC. 4. *Carcass.*—This word shall apply to the carcass of an animal that has been killed under these regulations and shall include all parts that are to be used as food.

SEC. 5. *Primal parts of carcasses.*—This phrase shall mean the usual sections or cuts of the dressed carcass commonly known as sides, shoulders, hams, backs, bellies, quarters, tongues, livers, tails, etc., before they have been subdivided preliminary to use in the manufacture of meat food products.

SEC. 6. *Meat food products.*—A meat food product, within the meaning of these regulations, is considered to be any article of food intended for human use which is derived or prepared in whole or in part from any edible portion of the carcass of cattle, calves, sheep, swine, or goats, if the said edible portion so used is considerable and definite portion of the finished food.

SEC. 7. *Foodstuffs.*—This term shall mean any article or articles sold or offered for sale as human food.

Regulation No. 2.

SEC. 1. An ante mortem inspection and examination shall be made at place or places where slaughtering is done, of all cattle, calves, sheep, swine, or goats about to be slaughtered for sale in Little Rock. (This shall not be construed to prevent producers from butchering at home stock raised by them, provided that the places and manner of slaughter by producers shall be subject to inspection and regulation.)

SEC. 2. Any animal showing symptoms of being affected with any disease or condition which would cause its condemnation, if disease is of an incurable or contagious nature, shall be slaughtered at once. And, if post-mortem examination shall prove the diseased condition, such carcass shall be destroyed as provided in regulation 5, section 1. But the chief food and meat inspector shall have the discretion of permitting the owner to refrain from slaughtering such animal. Should the owner be dissatisfied with the ante mortem inspection, he shall have the right to call a competent veterinarian, who, together with the inspector, shall select a third veterinarian, and the majority opinion of these three shall control as to the disposition of such animal. The third veterinarian called in shall be paid by the owner if condemnation is upheld; otherwise by the city.

Regulation No. 3.

SEC. 1. A careful post-mortem inspection and examination shall be made, at the place or places established by the city for inspection of all carcasses of cattle, calves, sheep, swine, or goats intended for use as food in the city of Little Rock, and the owner of such carcass shall present the same at such place or places at the time and during the hours when the inspector shall be making inspections thereat.

SEC. 2. Carcasses will not be inspected and marked as provided in regulation 3, section 3, unless the head, hide (attached to the nose), heart, liver, lungs, and kidneys are held by their natural attachments. The spleen may be detached from the stomach, but must be brought in with the carcass from which it was taken, attached by some artificial means, as a skewer.

SEC. 3. Upon all carcasses, parts of carcasses, free from disease and sound, wholesome, and fit for human food, there shall be placed by the inspector, or his assistants, the words "Little Rock inspected and passed," or an abbreviation thereof, and such other matter as may be required by the board of health.

SEC. 4. Should any lesion of disease be found at post-mortem examination the carcass, parts of carcass, or organ shall be marked by the inspector, or his assistants with the words "Little Rock inspected and condemned," or an authorized abbreviation thereof, and the same shall be destroyed for food purposes as provided in regulation 5, section 1. Carcasses, parts, or meats so marked shall not be washed or trimmed unless such washing and trimming is authorized by the inspector.

Regulation No. 4.

SEC. 1. Any animal rejected by milk and dairy inspector on account of reacting on tuberculin test, or for other disease, may be brought to place or places where inspection is conducted, and if lesions are slight, or its use as meat is not injurious to the public health, carcass may be passed for food and the same may be disposed of as meat by the owner.

Regulation No. 5.

SEC. 1. All carcasses and parts of carcasses condemned by the inspector, or his assistants, will remain the property of the owner, but will be saturated with such agent (chemical) as will prevent such condemned carcass or part of carcass from being used or sold as food; and said owner shall immediately remove such condemned carcass, parts, or organ, from within the city limits and at once destroy same. If the owner of a carcass shall be dissatisfied with the inspection he shall have the right to call a veterinarian, who, together with the inspector, shall select a third person, who is a veterinarian, and the three shall reexamine said carcass, and if a majority find that said carcass shall be condemned, then the owner shall bear the expense of the examination; but if such previous condemnation is held erroneous, then the city shall bear said expense.

SEC. 2. When any meat or other foodstuffs is condemned by the inspector, or his assistants, when condemned in a butcher shop, grocery, bakery, restaurant, lunch stand, or any other place where meat or other foodstuffs are sold, offered for sale, or stored, the same shall be removed from such place immediately upon the order of the inspector or his assistants, and shall, at his discretion, by him be saturated with such agent (chemical) as will prevent such condemned meat or other foodstuffs being sold for food.

Regulation No. 6.

SEC. 1. Ceilings, walls, pillars of establishments shall be kept in a clean and sanitary condition, and when deemed necessary by the inspector, or his assistant, they shall be washed, scraped, painted, or otherwise treated as required. When floors or other parts of a building or tables, or other part of the equipment, are so old, or in such poor condition that they can not be readily made sanitary, they shall be removed and shall be replaced by suitable materials. All floors upon which meat or other foodstuffs are piled shall be so constructed that they can be kept in a clean and sanitary condition, and all meats, or other foodstuffs, piled upon floors shall be suitably protected from trucks, etc. Walks and platforms and approaches leading into establishments shall be kept clean to prevent tracking dirt into the same.

SEC. 2. All trucks, trays, and other receptacles, all chutes, platforms, racks, tables, etc., and all knives, saws, cleavers, and other tools, and all utensils, machinery, and vehicles used in moving, handling, cutting, chopping, mixing, or other processing shall be thoroughly cleaned before using.

Sec. 3. All wagons, vehicles, or other means of transporting meat shall be kept in a clean and sanitary condition, and when in use shall be kept covered with clean tarpaulins, or sheets, so that dust, flies, and all foreign matter shall be excluded therefrom, and the meat or foodstuffs kept free from infection.

Sec. 4. All slaughtering of animals within 1 mile of the city limits must be done at the places designated by the board of health, and plans and locations of places intended to be built in the future must be approved by the board of health before any slaughtering is done thereat.

Sec. 5. Managers or owners of establishments must require employees to be cleanly. The aprons, frocks, smocks, or other outer clothing worn by employees who handle meat, meat food products, or other foodstuffs shall be of a material that is readily cleansed and made sanitary, and only clean garments shall be worn. Persons who handle meat, meat food products, or other foodstuffs shall be required to keep their hands clean and they shall be required to pay attention to the cleanliness of their boots and shoes.

Sec. 6. Persons affected with tuberculosis or any other communicable disease shall not be employed in any of the departments of any establishment where carcasses are dressed, meat is handled, meat food products or other foodstuffs are prepared or offered for sale, and any employee of such establishment who may be suspected of being so affected shall be reported by the chief food and meat inspector to the board of health.

Sec. 7. All water-closets, toilet rooms, and dressing rooms shall be entirely separated from compartments in which carcasses are dressed, meat, meat food products, or other foodstuffs are cured, stored, packed, handled, prepared, or offered for sale. Where such rooms open into compartments in which meat, meat food products, or other foodstuffs are handled or offered for sale, they must, when this is deemed necessary by the inspector, be provided with properly ventilated vestibules with doors which can be kept closed. They shall be conveniently located, sufficient in number, ample in size, and be kept in a sanitary condition.

Sec. 8. Rooms or compartments in which meat, meat food products, or other foodstuffs are prepared, stored, packed, handled, or offered for sale shall be free from odors from toilets, catch basins, casing departments, tank rooms, hide cellars, etc., and shall be kept free from flies and other vermin by screening or other suitable methods. All rooms or compartments shall be provided with cuspidors of such shape as not to be readily overturned or upset and of such construction and material as to be readily disinfected, and employees who expectorate shall be required to use them.

Sec. 9. The feeding of hogs or other animals intended to be slaughtered for food to be sold in the city of Little Rock on the refuse or offal of slaughterhouses shall not be permitted.

Sec. 10. All yards, fences, pens, chutes, alleys, etc., belonging to the premises where inspection is conducted or where meats or other foodstuffs are offered for sale, whether they are used or not, shall be maintained in a sanitary condition.

Sec. 11. Butchers or others who dress or handle diseased carcasses or parts shall cleanse their hands and tools of all grease and then immerse them in a prescribed disinfectant and rinse them in clear water before dressing or handling healthy carcasses. Facilities for such cleansing and disinfection, approved by the board of health or chief food and meat inspector, shall be provided by the owner of establishments where slaughtering is conducted.

Sec. 12. Due care must be taken to prevent meat or other foodstuffs from falling on floor, and in the event of having so fallen, they must be condemned, or the soiled portion removed and condemned.

Sec. 13. Carcasses shall not be inflated with air from the mouth, and no inflation of carcasses except by mechanical means shall be allowed. All inflation of carcasses must be done in the presence of the inspector, otherwise he shall not be permitted to mark same as "inspected and passed." Carcasses shall not be dressed with skewers, knives, etc., that have been held in the mouth. Spitting on whetstones or steels shall not be allowed.

Sec. 14. Only good, clean, and wholesome water shall be used in the preparation of carcasses, parts, meats, or other foodstuffs. Whenever there is any doubt regarding the sanitary condition of the water used the inspector shall take sample of same and submit it to the city bacteriologist.

Sec. 15. Wagon yards, or other similar places, where carcasses are held during the day or night, shall provide a closed room in which carcasses, or parts of carcasses, must be placed so as to protect same from dust, flies, or other foreign matter, said room or rooms to be kept in a clean and sanitary condition at all times.

MANKATO, MINN.

FOODSTUFFS—PROTECTION OF.

SEC. 1. Within the corporate limits of the city of Mankato, all fruits, berries, cherries, dates, figs, and candies exposed for sale in any store, shop, or building shall be protected from flies, and all fruits, berries, and candies exposed for sale outside of a building, or in any wagon or cart, shall be protected from both flies and dust.

SEC. 2. Any person violating any of the provisions of this ordinance shall be guilty of a misdemeanor, and upon conviction thereof before the municipal court of said city be punished by a fine not exceeding $25, and in default of payment of the same be imprisoned in the city prison or county jail of Blue Earth County for a term not exceeding 10 days.

[Ordinance adopted Aug. 28, 1911.]

NEW ORLEANS, LA.

CEREBROSPINAL MENINGITIS AND WHOOPING COUGH MADE NOTIFIABLE.

Resolved, That from and after this date, pertussis (whooping cough) and cerebrospinal meningitis be included in the list of communicable diseases to be reported to the board of health of the city of New Orleans, under the provisions of section 27 of ordinance 6022, A. S., as amended by ordinance 3029, C. S., and 532, N. C. S., and by resolutions of the board of health of the city of New Orleans, dated August 12, 1901, and May 14, 1907, and April 13, 1909, and March 14, 1911, and January 9, 1912.

[Resolution, board of health, adopted Jan. 25, 1912.]

OIL CITY, PA.

SAMPLES OF PROPRIETARY MEDICINES AND PREPARED FOODS.

RULE 22. It shall be unlawful to pass out, distribute, or peddle in any manner, patent or proprietary medicine, washing or soap powders, soaps, tobaccos, yeast, patent or prepared foods, or any other package or substance. The free distribution of the above-mentioned articles in the manner indicated is hereby declared dangerous and detrimental to public health and is therefore prohibited.

[Regulation board of health adopted Oct. 18, 1911.]

UNION (TOWNSHIP), N. J.

BOARD OF HEALTH—OFFICERS AND DUTIES.

SEC. 1. That the chairman of the township committee for the time being shall act as chairman of the board of health, and the township assessor for the time being shall be the secretary thereof.

SEC. 2. That the chairman shall perform such duties as usually appertain to such office, and the secretary shall keep a record of the proceedings of the board, and of all complaints relating to sanitary matters, and shall perform such other duties as may be required of him by the board in the discharge of their duties.

SEC. 41. That any member of the board of health, the agents or officers thereof, may make inspections and examinations required by any law of this State, or by any code, ordinance, regulation, or order of this board, upon exhibiting his badge accompanied by a certificate of authority under the seal of the board; and all persons are hereby forbidden to interfere with or obstruct such inspection, examination, or execution under a penalty of $25 for each and every offense, and until an inspector shall be appointed by this board, all powers herein conferred upon an officer or inspector shall be, and the same are hereby, given to each member of the board.

[Part of ordinance adopted Dec. 11, 1911.]

PLAGUE-PREVENTION WORK.

PLAGUUE-INFECTED SQUIRRELS FOUND.

During the week ended May 11, 1912, positive diagnosis of plague was made in 18 ground squirrels collected in Alameda County, Cal. The squirrels were found as follows: April 22, 2 squirrels; April 26, 4 squirrels; April 29, 1 squirrel; April 30, 10 squirrels; May 1, 1 squirrel.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 8,286 acres of land in Alameda County were covered with poison during the week ended May 11, 1912.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	May 1, 1912	206 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	May 11, 1912	18	[1] 155	108	
Oakland	do	29	[2] 755	598	
San Francisco	do	9	[3] 1,609	1,339	
Washington:					
City—					
Seattle	do		1,067	1,014	

[1] Identified: Mus norvegicus, 126; Mus musculus, 29.

[2] Identified: Mus norvegicus, 621; Mus rattus, 4; Mus musculus, 128; Mus alexandrinus, 2

[3] Identified: Mus norvegicus, 884; Mus musculus, 270; Mus rattus, 222; Mus alexandrinus, 233

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended May 11, 1912, 367 ground squirrels collected in Alameda County and 1,645 collected in Contra Costa County, Cal., were examined for plague infection. Eighteen collected in Alameda County were found to be plague infected.

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED JUNE 1, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	1		Newark, N. J	1	1
Chicago, Ill		2	New Bedford, Mass		1
Cincinnati, Ohio	2	1	New Orleans, La	1	
Cleveland, Ohio	2		New York, N. Y	7	7
El Paso, Tex	1	2	Oklahoma City, Okla		1
Kansas City, Mo		1	Philadelphia, Pa	2	
Los Angeles, Cal	1		Providence, R. I		1
Lynchburg, Va		1	St. Louis, Mo		1
Manchester, N. H	1	1	San Antonio, Tex	1	2
Montclair, N. J	1		Springfield, Ill		1
Mount Vernon, N. Y	1		Superior, Wis		1
Nashville, Tenn	4	1			

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED JUNE 1, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Baltimore, Md		1	Newcastle, Pa	1	
Boston, Mass		1	New York, N. Y	25	6
Chicago, Ill	5	1	Philadelphia, Pa	16	1
Cincinnati, Ohio	1		Pittsburgh, Pa	3	1
Kalamazoo, Mich	4		Rockford, Ill		1
Los Angeles, Cal	2		St. Louis, Mo	2	
Milwaukee, Wis		1	San Francisco, Cal	3	
Mount Vernon, N. Y	1		York, Pa	1	
Newark, N. J		1			

PELLAGRA.

During the week ended June 1, 1912, pellagra was reported as follows: Baltimore, Md., 1 death; Lexington, Ky., 1 case; Montgomery, Ala., 1 death; Richmond, Va., 1 death.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED JUNE 1, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Altoona, Pa		1	New Orleans, La		4
Ann Arbor, Mich	1		Newton, Mass		1
Aurora, Ill		2	New York, N. Y		92
Baltimore, Md		11	Niagara Falls, N. Y		2
Beaver Falls, Pa	1		Oklahoma City, Okla		1
Berkeley, Cal		1	Omaha, Nebr		4
Binghamton, N. Y	7	1	Passaic, N. J		3
Boston, Mass		18	Pawtucket, R. I		1
Bridgeport, Conn		6	Peoria, Ill		2
Cambridge, Mass		5	Philadelphia, Pa	24	30
Chicago, Ill	26	69	Pittsburgh, Pa	17	20
Cincinnati, Ohio		3	Pittsfield, Mass		2
Cleveland, Ohio	14	5	Providence, R. I		3
Cumberland, Md		1	Reading, Pa		2
Dayton, Ohio		1	Richmond, Va		3
Elizabeth, N. J		1	Rockford, Ill		1
El Paso, Tex		1	Saginaw, Mich		1
Evansville, Ind		1	Salem, Mass		1
Everett, Mass		2	San Antonio, Tex		1
Fall River, Mass		5	San Francisco, Cal	8	
Grand Rapids, Mich	1	1	Saratoga Springs, N. Y	1	1
Haverhill, Mass	2	2	Schenectady, N. Y	6	
Houston, Tex		1	Seattle, Wash		5
Kalamazoo, Mich	3	2	South Bethlehem, Pa	1	1
Kansas City, Mo		2	South Omaha, Nebr		5
Lawrence, Mass		1	Spokane, Wash		1
Los Angeles, Cal	1	5	Springfield, Ill		1
Lynn, Mass		4	Springfield, Mass		3
McKeesport, Pa	1	1	Superior, Wis		3
Malden, Mass		2	Toledo, Ohio		4
Manchester, N. H	2	2	Waltham, Mass		1
Moline, Ill		2	Washington, D. C		7
Montclair, N. J		1	Wilkinsburg, Pa	1	
Nashville, Tenn		5	Williamsport, Pa		1
Newark, N. J		4	Wilmington, Del		1
New Bedford, Mass		4	Yonkers, N. Y		1
Newburyport, Mass		1			

POLIOMYELITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED JUNE 1, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Binghamton, N. Y	1		Pittsburgh, Pa		1
Hartford, Conn		2	Seattle, Wash		1
Lowell, Mass	1		Springfield, Mass	2	
New York, N. Y	4	1			

RABIES.

During the week ended June 1, 1912, 1 case of rabies was reported at San Francisco, Cal.

TETANUS.

During the week ended June 1, 1912, tetanus was reported as follows: Baltimore, Md., 2 deaths; Dayton, Ohio, 1 death; Milwaukee, Wis., 1 case.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED JUNE 21, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Connecticut:				
Counties—				
Litchfield	May 1-30	4		
New Haven	do	39		
New London	do	1		
Windham	do	28		
Total for State		72		
Florida:				
Counties—				
Franklin	May 27-June 2	4		
Putnam	do	4		
Volusia	do	4		
Total for State		12		
Iowa:				
Counties—				
Appanoose	May 1-31	2		
Butler	do	5		
Carroll	do	1		
Cerro Gordo	do	2		
Clay	do	1		
Davis	do	2		
Hancock	do	1		
Kossuth	do	1		
Polk	do	3		
Pottawattamie	do	11		
Sac	do	8		
Wayne	do	3		
Worth	do	4		
Total for State		44		
***Louisiana:**				
New Orleans	June 2-8	4		
Maryland	May 1-31			No case.
Massachusetts:				
Counties—				
Essex	do	7		
Franklin	do	3		
Kent	do	1		
Suffolk	do	2		
Total for State		13		
Michigan:				
Counties—				
Allegan	May 1-31	3		
Cass	do	1		
Chippewa	do	3		
Hillsdale	do	2		
Jackson	do	1		
Montcalm	do	1		
Saginaw	do	1		
St. Clair	do	1		
St. Joseph	do	1		
Wayne	do	8		
Total for State		22		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended June 21, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
*Nebraska:				
Omaha	June 2-8	1		
North Dakota:				
Counties—				
Bottineau	May 1-31	1		
Cass	do	1		
Grand Forks	do	2		
McIntosh	do	2		
Total for State		6		
Ohio:				
Counties—				
Athens	May 1-31	3		
Columbiana	do	1		
Cuyahoga	do	1		
Franklin	do	9		
Hamilton	do	1		
Hancock	do	4		
Lucas	do	2		
Hocking	do	2		
Miami	do	1		
Montgomery	do	9		
Total for State		33		
South Carolina:				
Charleston	May 1-31	6		
*Tennessee:				
Chattanooga	June 2-8	1		
Virginia:				
Counties—				
Albermarle	May 1-31	6		
Brunswick	do	2		
Buchanan	do	2		
Dinwiddie	do	1		
Goochland	do	1		
Henrico	do	5		
Mecklenburg	do	4		
Norfolk	do	22		
Northampton	do	1		
Russell	do	3		
Southampton	do	3		
Scott	do	1		
Smyth	do	9		
Total for State		60		
Wisconsin	Jan. 1-Mar. 31	35		These cases are in addition to those previously noted.
Grand total for the United States.		309		

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED JUNE 1, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	171	9		17		7				26	26	12	2
Boston, Mass	670,585	209	34	2	149	4	17	1			80	15	16	
Chicago, Ill	2,185,283	576	104	11	254	3	219	7	5		68	68	15	
Cleveland, Ohio	560,663	119	17	1	111		29	4			24	16	4	1
New York, N. Y	4,766,883	1,275	242	15	1,396	22	305	21			368	136	41	4
Philadelphia, Pa	1,549,008	407	60	5	27		62	3			111	49	25	1
Pittsburgh, Pa	533,905	134	12	1	201	5	40	1			31	6	8	1
St. Louis, Mo	687,029	201	25	1	18		42				36	22	4	
Cities having from 300,000 to 500,000 inhabitants.														
Cincinnati, Ohio	364,463	104	5		12		11				34	16	5	2
Los Angeles, Cal	319,198	87	4		7		5		1		31	9	3	2
Milwaukee, Wis	373,857		7	1	143	5	15		3		13	9	13	2
Newark, N. J	347,469	96	10		25	1	18				26	10	3	
New Orleans, La	339,075	126	1		14		4		1		22	13	2	
San Francisco, Cal	416,912	136	5		9		4		1		18	16	2	
Washington, D. C	331,069	123	1		117		5				32	23	2	1
Cities having from 200,000 to 300,000 inhabitants.														
Jersey City, N. J	267,779	59				1		1				6		
Kansas City, Mo	248,381	17	3		15		3	1				13	1	
Providence, R. I	224,326	76	7	1	2	2	16	1			3	7	1	1
Seattle, Wash	237,194	38	5		16		4				6	6	5	1
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	31	1	1	5	1	6	1			3	4		
Cambridge, Mass	104,839	26	1		50		1				7	2	1	
Dayton, Ohio	116,577	34	1		64				3			3	1	1
Fall River, Mass	119,295	35	1		3		2				6	7	1	1
Grand Rapids, Mich	112,571	36			5		1					4	5	
Lowell, Mass	106,294	29	1		42	2	3				2	1	2	
Nashville, Tenn	110,364	42			2						5	6		
Omaha, Nebr	124,096	37			1		3	2	1			1		
Richmond, Va	127,628	46			24		1				3	5	1	
Spokane, Wash	104,402		2		26				3					
Toledo, Ohio	168,497	58	5	3	85	1	3					7	5	1
Worcester, Mass	145,986		9	1	37	1	2				4	3		
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127		1				1						1	
Bayonne, N. J	55,545	17			5		4					1		
Brockton, Mass	56,878	7			8						2		3	
Camden, N. J	94,538		3				2				9			
Duluth, Minn	78,466	25	2				11		1		4	4	4	1
Elizabeth, N. J	73,409	18	2		5		6				1	1		
Evansville, Ind	69,647	15			1				1			1	1	
Fort Wayne, Ind	63,933	12	2		9		2				2	2	1	
Harrisburg, Pa	64,186	16	2		11				1		4			
Hartford, Conn	98,915	31	5		40		9				8	3		
Hoboken, N. J	70,324	6	1								5			
Houston, Tex	78,800	37										1		2
Johnstown, Pa	55,482	18			9		3					1		
Kansas City, Kans	82,331		1		2		1				1			
Lawrence, Mass	85,892	19	1	1	9						2	3		
Lynn, Mass	89,336	20	1		5		1				1	3	1	
Manchester, N. H	70,063	22	1		11								1	
New Bedford, Mass	96,652	16	1		2		2				6	2	1	
Oklahoma City, Okla	64,205	13	1		1							3	1	1
Passaic, N. J	54,773	14	1	1	16		1					1		
Pawtucket, R. I	51,622											1		
Peoria, Ill	66,950	12					2							
Reading, Pa	96,071	21	4		20		1				2	1	9	

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended June 1, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Con.														
Saginaw, Mich	50,510	12	2		3		4						1	1
San Antonio, Tex	96,614	63	4				3		1				1	1
Schenectady, N. Y	72,826	17			60	2	8				6	2		
South Bend, Ind	53,684	14					2					1	1	
Springfield, Ill	51,678	11	1						2				2	
Springfield, Mass	88,926	26			14		5				3	1	1	
Trenton, N. J	96,815	29	3				2				12	5	9	
Wilkes-Barre, Pa	67,105	20	3		3						5			
Wilmington, Del	87,411	19										3		
Yonkers, N. Y	79,803	14	2	1	4		5				1	1		
Cities having from 25,000 to 50,000 inhabitants.														
Aurora, Ill	29,807	6	1		1							1		
Berkeley, Cal	40,434		1		3		1				1	1		
Binghamton, N. Y	48,443	15			1						1		1	
Brookline, Mass	27,792	5	1		18		1				1			
Chelsea, Mass	32,452	14			13		1				3	2	1	
Chicopee, Mass	25,401	4			5								1	
Danville, Ill	27,871	7										1		
East Orange, N. J	34,371				26									
Elmira, N. Y	37,176	8	1		70						2		2	
El Paso, Tex	39,279	40		1			2		6	2		7		
Everett, Mass	33,484	8			10		2				3	1	2	
Fitchburg, Mass	37,826	7					1				4	1		
Haverhill, Mass	44,115	10	1		11		3				5	1		
Kalamazoo, Mich	39,437	19									4	2		
Knoxville, Tenn	36,346	7							8			3		
La Crosse, Wis	30,417	7	3											
Lancaster, Pa	47,227				9								1	
Lexington, Ky	35,099	8	2		4						3			
Lima, Ohio	30,508	5			3		1							
Lynchburg, Va	29,494	11			11	1	2					1		
Malden, Mass	44,404	15	1		29		1				2	2		
McKeesport, Pa	42,694	5												
Montgomery, Ala	38,136	19			2				1			1	5	
Mount Vernon, N. Y	30,919		1		17		1							
Newcastle, Pa	36,280		2		1						1			
Newport, Ky	30,309	6					1	1			2	2		
Newton, Mass	39,806	8			62						1	1		
Niagara Falls, N. Y	30,445	10	1	1	1				1		2	1		1
Norristown, Pa	27,875	7					1						1	
Orange, N. J	29,630	10			3							1		
Pasadena, Cal	30,291	4												
Pittsfield, Mass	32,121	10	3		2						2	1	1	
Portsmouth, Va	33,190	8					1		1			1		
Racine, Wis	38,002	11	2				1							
Roanoke, Va	34,874	9			7		2				2		2	
Rockford, Ill	45,401	19	1				6					1	24	
Salem, Mass	43,697	12			2				1			2		1
San Diego, Cal	39,578				3	1					5	5		
South Omaha, Nebr	26,259	8												
Superior, Wis	40,384	12	2				4							
Taunton, Mass	34,259	8			1		1				1	3		
Waltham, Mass	27,834		3	1	17							1		
West Hoboken, N. J	35,403		1		10		2							
Williamsport, Pa	31,860	15	4		72		1					1	2	
Wilmington, N. C	25,748	9			8		1				1	1	1	
York, Pa	44,750		3		21		1				4			
Zanesville, Ohio	28,026	5											6	
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	2			41						1	1		
Ann Arbor, Mich	14,817	10	1	1								1		
Bennington, Vt					17								1	
Biddeford, Me	17,079	5												
Braddock, Pa	17,759	5			1						1			
Cambridge, Ohio	11,327	3									1			

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended June 1, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants—Continued.														
Camden, S. C.		2										1		
Carbondale, Pa.	17,040	3			9									
Clinton, Mass.	13,075	3					1				2			
Columbus, Ga.	20,554	12												
Columbus, Ind.		2					1					1		
Cumberland, Md	21,839	11			29								4	
Dunkirk, N. Y.		4									1	1	2	1
Galesburg, Ill.	20,089	3	4											
Harrison, N. J.	14,498	2	2		2						1	2		
La Fayette, Ind	20,081	6										2		
Logansport, Ind.	19,050	6	1		1						1	3	1	
Marinette, Wis.	14,610	2											1	
Marlboro, Mass.	14,577	2									1			
Massillon, Ohio	13,879	1	2				1							
Medford, Mass.	23,156	8			40		1					1		
Melrose, Mass.	15,715	1			18									
Moline, Ill.	24,199	7					1					2		
Montclair, N. J.	21,550	8			5						5	2	1	
Morristown, N. J.	12,507	3			12									
Nanticoke, Pa.	18,509	5	1											
Newburyport, Mass.	19,240	3	1				1				1		2	
North Adams, Mass.	22,012	3			1									
Northampton, Mass.	19,431	7	1		4						1	1		
Palmer, Mass.		6												
Rutland, Vt.	13,546												1	
Saratoga Springs, N. Y.		5										1		
South Bethlehem, Pa.	19,973	5			2						1	1		
Steelton, Pa.	14,246	2	2		18									
Wilkinsburg, Pa.	18,294	3			1		1							
Woburn, Mass.	15,308	3									1			

STATISTICAL REPORTS OF MORBIBITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

North Dakota.—Month of April, 1912. Population, 577,056. Total number of deaths from all causes 359. Cases reported: Diphtheria 11, measles 8, scarlet fever 43, smallpox 15, tuberculosis 8, typhoid fever 13.

Oregon.—Month of January, 1912. Population, 672,765. Total number of deaths from all causes 399, including diphtheria 4, scarlet fever 2, smallpox 1, tuberculosis 59, typhoid fever 3. Cases reported: Diphtheria 41, measles 11, scarlet fever 59, smallpox 141, tuberculosis 14, typhoid fever 13.

Month of February, 1912. Total number of deaths from all causes 450, including diphtheria 1, scarlet fever 1, smallpox 1, tuberculosis 30, typhoid fever 5. Cases reported: Diphtheria 42, measles 15, scarlet fever 76, smallpox 86, tuberculosis 23, typhoid fever 16.

Month of March, 1912. Total number of deaths from all causes 490, including diphtheria 2, measles 1, scarlet fever 1, tuberculosis 67, typhoid fever 1. Cases reported: Diphtheria 11, measles 35, scarlet fever 62, smallpox 61, tuberculosis 23, typhoid fever 11.

FOREIGN AND INSULAR.

BRITISH GUIANA.

Health Conditions.

The following statement was received from Consul Hanna at Georgetown:

Filariasis.—A recent examination of several hundred school children showed that 75 per cent of the number were suffering from filariasis. It is estimated that the proportion of persons affected with the disease in the colony is about 80 per cent.

Leprosy.—The average daily number of patients present in the leper asylum during the year ended March 31, 1911, was 424.

Malaria.—Malarial fever is prevalent throughout the colony. The number of cases treated in public hospitals during the year ended March 31, 1911, was reported as follows:

	Cases.	Deaths.
Malarial fever	44	9
(*a*) Intermittent	1,943	78
(*b*) Remittent	56	3
(*c*) Pernicious remittent	10	4
(*d*) Cachexia	9	2
Total	2,062	96

Malaria is very common on the sugar plantations. The number of cases admitted to the estates hospitals for the five years 1906–1911, in an average population of 58,778, was as follows: 1906–7, 33,748; 1907–8, 26,930; 1908–9, 28,181; 1909–10. 27,301; 1910–11, 21,063.

Quinine is distributed by the post offices of the colony at cost price. The sale is steadily increasing, as the following figures show: Sale in 1906–7, 326 ounces (December to March); sale in 1907–8, 1,211 ounces; sale in 1908–9, 2,076 ounces; sale in 1909–10, 3,000 ounces; sale in 1910–11, 3,120 ounces.

GEORGETOWN.

The population of Georgetown, the capital of the colony, in 1891 was 54,891 and in 1911 it was 57,577. The total number of deaths from 1891 to 1911 was 53,464. Taking 56,234 as the average population for the 20 years, the average annual death rate was 47.54 per thousand. The report of the registrar general shows that the number of deaths in 1910 was 3,028. The death rate in 1910 was 52.59 per thousand, giving the city 57,577 population, in accordance with the census of 1911. The average annual number of deaths for the five preceding years was 2,716.

During the year 1909 there were 232 deaths from tuberculosis and 235 from malarial and other fevers; in 1910, 266 deaths from tuberculosis and 249 from malarial and other fevers.

CHILE.

History of Yellow Fever Outbreak at Tocopilla.

The port of Tocopilla was officially declared to be infected with yellow fever April 25. The first case appeared January 28 in a passenger on the steamship *Condor* from Guayaquil. The patient exhibited symptoms taken to be those of typhus fever before disembarking at Tocopilla and was sent to the lazaretto. On February 12 cases of yellow fever appeared among the patients in the lazaretto. The disease spread to the entire city. To April 30, 570 cases of yellow fever, with 179 deaths, were reported at Tocopilla. *Stegomyia* were found to be present and measures for mosquito destruction were instituted.

On May 7 yellow fever was reported present at five localities in the vicinity of Tocopilla.

CHINA.

Typhus Fever.

Acting Asst. Surg. Ransom at Shanghai reported 1 case of typhus fever at Hankow April 27.

At Tientsin Consul General Knabenshue reported a death from typhus fever for the week ended May 4.

Hongkong—Plague—Smallpox—Plague-Infected Rats.

Surg. Brown reports: During the week ended May 4, 144 cases of plague with 122 deaths and 6 cases of smallpox with 4 deaths were reported at Hongkong.

During the same period 2,514 rats were examined for plague infection. Of this number 33 rats were found to be plague-infected.

HAWAII.

Examination of Rodents for Plague Infection.

During the week ended May 19, 760 rats and mongoose were examined at Hilo and 1,292 at Honokaa. At Honolulu during the same period 310 rats and mongoose were examined. No plague-infected rodent was found.

The last case of human plague at Honokaa was found March 18, 1912. A plague-infected rat was found between Honokaa and Kapulena April 24, 1912.

ITALY.

Typhus Fever.

At Catania Consul Garrels reports the occurrence of 4 deaths from typhus fever during the week ended May 24.

At Palermo Consul de Soto reports 2 cases of typhus fever with 1 death for the week ended May 11.

Examination of Emigrants.

Surg. Geddings at Naples reports:

Vessels inspected at Naples, Messina, and Palermo week ended May 25.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 19	Prinzess Irene	New York	1,083	150	1,480
22	Canopic	Boston	915	170	1,120
22	Ancona	Philadelphia	1,690	255	2,480
22	Saxonia	New York			
24	Sant' Anna	do	759	155	1,050
25	Principe di Piemonte	do	598	60	850
25	San Guglielmo	do			
	Total		5,045	790	6,980

MESSINA.

May 20	Saxonia	New York			

PALERMO.

May 18	Carolina	New York			
20	Prinzess Irene	do	261	200	150
23	Columbia	do			
23	Canopic	Boston	70	100	50
23	Ancona	New York	235	250	125
24	Athinai	do			
25	Sant' Anna	do	590	580	350
25	Principe di Piemonte	do	367	245	150
	Total		1,523	1,375	825

MEXICO.

Mexico City—Typhus Fever.

Consul Shanklin reports the occurrence of 47 cases of typhus fever with 6 deaths during the week ended April 27.

Yellow Fever at San Juan Bautista.

The American consul at Frontera reports June 16 the occurrence of 2 new cases of yellow fever at San Juan Bautista.

PHILIPPINE ISLANDS.

Manila—Quarantine Measures against Cholera and Plague.

The chief quarantine officer reports, May 6:

CHOLERA PREVENTIVE MEASURES.

The Philippines have now been free from cases of cholera for the longest period for a number of years. Its possible recurrence, however, has not been lost sight of, and constant vigilance is exercised to prevent the introduction of the disease from without. An effort is now on foot to have the stools of all steerage passengers arriving at Manila examined to demonstrate if possible the presence or absence of cholera carriers. It is hoped to commence this work during the following weeks.

ANTIPLAGUE QUARANTINE.

During the week ended May 4, 664 passengers from 12 vessels were in quarantine at the Mariveles quarantine station completing seven days' detention after arrival at this port. Rigid inspections are made daily. All arrivals are bathed and their effects disinfected. During the week 268 persons entered quarantine and 396 were released.

Reports from Hongkong show that there were recorded 317 deaths from plague in Hongkong during April. Those occurring in Hongkong proper were classed as 3 septicemic and 262 bubonic, while those in Kowloon (across the strait) were 8 pneumonic, 11 septicemic, and 33 bubonic. The diagnosis in each case is said to have been verified by autopsy. The menace to the Philippines at this time is very great.

PORTO RICO.

San Juan—Plague.

Twelve cases of bubonic plague with 5 deaths have occurred in San Juan. All the cases occurred in Porto Ricans. The first suspected case was reported June 14. There appear to be two foci of the disease. The source is probably infected rats, although this has not as yet been determined. Active measures are being taken to prevent the spread of the disease.

As a rigid maritime quarantine has been maintained at San Juan against all vessels arriving from ports known to be plague infected, it is possible that the infection was introduced from some foreign port in which plague exists but has not been recognized, or, if recognized, has not been reported.

RUSSIA.

Typhus Fever.

At Moscow Consul General Snodgrass reports the occurrence of 13 cases of typhus fever with 5 deaths during the week ended May 4.

At St. Petersburg Consul Conner reports the occurrence of 1 case of typhus fever with 1 death during the week ended May 11.

TRIPOLI.

Tripoli—Typhus Fever.

Consul Wood reports that during the three weeks ended May 19, 5 cases of typhus fever with 2 deaths were reported at Tripoli.

WEST INDIES.

Trinidad—Plague.

Three deaths from plague were reported, June 13, at Port of Spain, Trinidad.

ZANZIBAR.

Zanzibar—Examination of Rats.

Consul Waddell reports as follows relative to the examination of rats for plague infection: February 15 to 29, 1912, 1,161; month of March, 1912, 3,521; month of April, 1912, 3,151. No plague-infected rats were found.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED JUNE 21, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State, and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Sumatra—				
Siantar	Apr. 1-27			Present.
India:				
Bassein	Apr. 21-27	9	8	
Bombay	May 5-11	8	18	
Madras	do	2		Madras Presidency, Mar. 1-31: Cases 2,153, deaths 1,344.
Moulmine	Apr. 21-27	8	8	
Turkey in Asia				Mar. 18-May 7: 53 cases and 31 deaths along the line of railway construction.
Antioch	Mar. 26-Apr. 16	11	6	

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	May 12-25		4	
Chile				May 7: Present in Iberia, Peregrina, Prosperidad, Santa Ana, and Santa Fe.
Tocopilla	Jan. 28-Apr. 30	570	179	Including previous report. Case Jan. 28 from s. s. Condor, from Guayaquil.
Mexico:				
San Juan Bautista	June 16	2		
Venezuela:				
Caracas	May 1-15	1		
Macuto	May 18-30		1	

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
German East Africa	Mar. 15-Apr. 10[1]			65 cases of pneumonic and 3 cases of bubonic in Gasseni and Useri Demassi.
India:				
Bombay	May 5-11	98	90	
Karachi	do	87	65	
Java:				
Pasoeroean Residency	Apr. 28-May 4	5	4	
Mauritius	Apr. 5-11	4	3	
Peru:				
Salaverry	May 23-29	1	1	
Porto Rico:				
San Juan	June 14-20	12	5	
Straits Settlements:				
Singapore	Apr. 21-27	1	1	
West Indies:				
Trinidad—				
Port of Spain	June 13		3	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
Canada	May 26-June 1	5		
Montreal	June 2-8	1		
Quebec	do	3		
Windsor	do	2		
Egypt:				
Cairo	May 1-6	1	1	
Germany				Total May 19-25: Cases, 6.
India:				
Bombay	May 5-11	57	36	
Karachi	do	2	2	
Madras	do	4	2	
Java:				
Batavia	May 1-6	2		

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[1] From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, May 30, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended June 21, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Mazatlan	May 22-28		2	
Veracruz	May 21-June 1	1		
Portugal:				
Lisbon	May 19-25	4		
Russia:				
Libau	May 21-26	1		
Odessa	May 12-18	1		
Riga	May 12-25	7		Mar. 1-31: 4 deaths.
Warsaw	Apr. 1-13	18	6	
Siberia:				
Vladivostok	Apr. 22-28	1		
Spain:				
Barcelona	May 19-June 1		4	
Straits Settlements:				
Singapore	Apr. 21-27	1	1	
Turkey in Europe:				
Constantinople	May 22-28		16	
Uruguay:				
Montevideo	Mar. 1-31	1		No case in January or February.

Reports Received From Dec. 30, 1911, to June 14, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	Aug. 30-Sept. 6; 2 fatal cases from s. s. Episticia from Asia Minor, p. 1635, Vol. XXVI.
Varna	Nov. 6	1		
China:				
Amoy	June 3			Present.
Hongkong	Jan. 14-20	1	1	July 2-15, 1911: Cases, 5; deaths, 4, p. 1300, Vol. XXVI.
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, Vol. I.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
Celebes, island	Mar. 10	5	2	
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-Apr. 20	148	109	
Bombay	Apr. 7-May 4	31	22	
Calcutta	Nov. 5-Apr. 20		1,356	
Madras	Nov. 26-May 4	559	453	Madras Presidency Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-Apr. 30: Cases, 22,878; deaths, 14,430.
Moulmine	Feb. 18-Apr. 20	33	30	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Mar. 31	143	124	
Indo-China:				
Saigon	Nov. 20-Apr. 29	1,821	1,279	And vicinity.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 14, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Italy				Total June 8-Dec. 31: **Cases**, 15,985; deaths, 6,022.
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands				Third quarter, 1911: **Manila**, 1, fatal case; Provinces, 27 **cases** and 22 deaths. Fourth quarter, 1911: **Manila**, no case and no death: Provinces, 22 cases, 20 deaths.
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2096, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Apr. 20		1,775	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2-Apr. 15	81	35	
Aleppo	Jan. 20-May 13	171	77	May 18, 2 cases; 1 death.
Amara	Oct. 15	1	1	
Basra	Oct. 22-28	14	10	
Erzeroum, vilayet	Sept. 11-16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Tor	Dec. 14-26	29		
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 14, 1912.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Mar. 23-25		1	
Ceara	Jan. 1-Feb. 29		5	
Manaos	Nov. 19-May 4		68	
Para	Mar. 3-9	2	2	Dec. 9-16: 1 fatal case.
Pernambuco	Jan. 1-Apr. 15		29	Apr. 2: Epidemic.
Rio de Janeiro	Mar. 17-Apr. 30	4	3	
Canal Zone:				
Culebra Island quarantine				In January 1 case from a vessel from Guayaquil. Mar. 2-4, 1 fatal case from s. s. Chile from Guayaquil.
Chile:				
Tocopilla	Apr. 11	90	25	And vicinity. Apr. 20: Still present.
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Apr. 15	14	6	
Guayaquil	Nov. 16-Apr. 30	173	77	
Huigra	Feb. 1-29.	1		
Milagro	Feb 1-Apr. 30	19	10	
Naranjal	Mar. 16-31	1		
Naranjito	do	9	6	
Yaguachi	Feb. 1-Apr. 30	3		
Great Britain:				
Liverpool	May 14-18	1		Convalescent on s. s. Gladiator from Cabdello, detained at Port Sanitary Hospital.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida				Total Aug. 1, 1911-May 25,1912: Cases, 67; deaths, 31.
Puerto Mexico (Coatzacoalcos).	Feb. 28-May 25		2	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
San Juan Bautista	May 11-June 9	6	1	
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-May 10	31		Dec. 1-30, 10 deaths, and Jan. 15-Mar. 31, 12 deaths, including previous reports. May 4-10, 1 death.
El Valle	Apr. 1-May 31			Present.
Guarenas	do			Do.
La Guaira	Mar. 17-Apr. 1	2	2	
Macuto	Mar. 16-19	1	1	Do.
Maiquetia	Feb. 24-Apr. 30	4	4	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
Barbados—				
Bridgetown	Apr. 27	1	1	From steamship Francis, from Para.
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Arabia:				
Aden	Mar. 5-25	2	1	
Azores:				
Fayal	Jan. 10			Still present.
Teceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Apr. 20	24	15	
Pernambuco	Oct. 1-Feb. 29		9	
Rio de Janeiro	Nov. 12-Feb. 10	7	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 14, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonia.
Chile:				
Iquique	Nov. 12-May 4	29	13	
Pisagua	Nov. 1-30	8		
China:				
Amoy	Jan. 13		1	
Chaochowfu	Mar. 10-Apr. 13			Present.
Hongkong	Dec. 9-May 4	517	447	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1,817; deaths, 1,324. Dec. 31-Mar. 2: Cases, 99; deaths, 95.
Provinces—				
Kediri	Jan. 1-Mar. 2	25	24	
Madiven	do	53	49	
Pasoeroean Residency, Malang District.	Nov. 12-Apr. 20	157	109	
Soerabaya	Oct. 17-27	2		
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Reports not available because of revolution.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported. Jan. 1-May 16: Cases, 458; deaths, 243.
Alexandria	Mar. 22-May 10	3	2	
Cairo	Apr. 22-May 14	4	3	
Provinces—				
Assiout	Jan. 1-May 14	84	54	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	do	42	31	
Behera	Jan. 1-Apr. 15	5	3	Sept. 11-16: Cases, 11; deaths, 3.
Beni Souef	Feb. 16-May 14	40	12	
Fayoum	Jan. 1-May 16	26	10	
Galioubeh	Jan. 1-Apr. 23	5	3	Oct. 5-Dec. 26: Case, 1.
Garbieh	Jan. 1-Apr. 24	24	8	
Carchieh	Apr. 21-27	8	7	
Girgeh	Mar. 28-May 13	5	3	
Kena	Jan. 1-May 14	122	88	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2-Apr. 23	9	2	
Minieh	Jan. 1-May 15	82	17	Dec. 13: Case, 1.
German East Africa:				
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Great Britain:				
Liverpool	Apr. 27-30	1	1	In the Royal Southern Hospital, from s. s. Italian Prince, which arrived at Liverpool Apr. 19, laden with fruit and grain from Mediterranean ports.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-May 4	1,189	983	
Calcutta	Nov. 11-Apr. 20		913	
Karachi	Nov. 26-May 4	1,059	922	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Mar. 31	231	221	
Bombay Presidency and Sind.	Oct. 29-Apr. 20	60,836	44,849	
Madras Presidency	do	10,450	8,094	
Bengal	do	41,919	35,690	
Babar and Orissa	Apr. 1-20	6,758	5,984	
United Provinces	Oct. 29-Apr. 20	108,195	97,121	
Punjab	do	21,693	16,416	
Burma	do	1,637	1,499	
Eastern Bengal and Assam.	Jan. 1-Feb. 24	2	2	
Central Provinces	Oct. 29-Apr. 20	29,504	23,436	
Coorg	Oct. 29-Mar. 23	88	52	
Mysore State	Oct. 29-Apr. 20	8,809	6,819	
Hyderabad State	do	27,569	24,851	
Central India	do	9,769	7,948	
Rajputana and Ajmere Merwara.	do	2,046	1,641	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 14, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Kashmir	Feb. 3-Apr. 20	331	164	
North West Province	Oct. 29-Apr. 20	4	3	Total for India, Oct. 29-Apr. 20: Cases, 329,670; deaths, 274,560. Total year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-Apr. 29	73	22	
Japan:				
Formosa	Mar. 7-Apr. 20	92	74	
Kobe	May 8	1	1	From s. s. Panama Maru, from Hongkong.
Nagasaki	Apr. 20	1		On the s. s. Tacoma Maru, from Hongkong and Shanghai.
Mauritius	Nov. 3-Mar. 28	109	66	
Persia:				
Bushire	Feb. 4-Apr. 13	322	219	
Mohammerah	Apr. 3	1		
Reshire	Feb. 6	2		
Peru:				
Departments—				
Callao	Oct. 1-21	1		City, in November, 1 case; in January, 3 cases with 2 deaths; Mar. 1-26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Apr. 10, 22 cases in the lazarette at Trujillo. Apr. 22 still present.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Manila				Apr. 6, a fatal case of pneumonic form in a member of the crew on s. s. Zafiro, arrived Apr. 4 from Hongkong.
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 deaths reported on p. 2098, Vol. I.
Senegal	May 29			Present.
Siam:				
Bangkok	Nov. 4-Mar. 23		5	
South Africa:				
Durban				Total: Jan. 14-Apr. 19, cases 27, deaths 22.
Straits Settlements:				
Singapore	Nov. 5-Apr. 13	31	27	
Turkey in Asia:				
Basra				Feb. 13, a fatal case in a stoker on s. s. Nicomedia from Bushire.
Jiddah	Jan. 13-May 6	21	13	Apr. 10-12, 3 cases from s.s. Adalia from Newcastle.
Venezuela:				
Caracas	Mar. 12-Apr. 22	6	2	
West Indies:				
Grenada	May 2-7	1	1	
Trinidad	Apr. 2-May 1	6	4	
At sea	Mar. 1-11	1	1	On s. s. Macedonia from Bombay to Aden.
Do	Apr. 1	1	1	Pneumonic on s. s. Loongsang en route from Hongkong to Manila.

SMALLPOX.

Algeria:				
Algiers	Nov. 1-Apr. 30		2	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Apr. 22	23	11	And vicinity.
Argentina:				
Buenos Aires	Jan. 1-31		2	Oct. 1-31, 6 deaths. No deaths in November or December, 1911.
Rosario	Oct. 1-Feb. 29		41	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 14, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14–May 11	5		
Budapest	Jan. 4–10	25		
Galicia	Dec. 24–May 11	39	1	
Krain	Jan. 14–20	7		
Trieste	Dec. 3–Apr. 6	2		From s.s. Baron Call from Beirut.
Tyrol	Jan. 14–Mar. 9	3		
Upper Austria	Apr. 28–May 11	1		
Vienna	Mar. 25–30	1		
Brazil:				
Bahia	July 1–31		1	
Para	Mar. 24–May 4	10	5	Case Mar. 30 from Alagoas.
Pernambuco	Oct. 1–Apr. 15		838	
Rio de Janeiro	Nov. 26–Apr. 20	32	1	
Santos	Dec. 12–23		1	
British East Africa:				
Mombasa	Mar. 1–31	5		
Canada:				
British Columbia—				
Fernie	Feb. 26–May 25	6		
Nelson	Dec. 24–30	1		
Vancouver	Apr. 14–20	1		
Victoria	Feb. 4–10	1		
Vinal Haven	May 17	7		5 miles from Eastport, Me.
Manitoba—				
Winnipeg	Jan. 14–Apr. 20	4		
New Brunswick—				
Summerstown	Apr. 12			Epidemic; 10 miles from Cornwall.
Nova Scotia—				
Halifax	Mar. 24–Apr. 6	2		
Ontario—				
Hamilton	Apr. 14–27	16		
Kingston	Dec. 19–23	1		
Ottawa	Dec. 10–May 25	106	1	
Niagara Falls	May 8–31	2		
Sarnia	Oct. 17–Mar. 23	43		
Toronto	Jan. 6–May 25	8	1	
Windsor	Feb. 4–Mar. 16	8		
Quebec—				
Montreal	Dec. 17–May 25	34		
Quebec	Dec. 10–June 1	300	2	
Yukon—				
Dawson	Apr. 1–6	1		
Ceylon:				
Colombo	Nov. 12–Apr. 13	4		And vicinity.
Chile:				
Iquique	Dec. 10–Mar. 16	4	2	
La Serena	Nov. 21–30	14		
Santiago	Nov. 1–30	685	343	
Talcahuano	Nov. 26–Dec. 23	14	3	
Valparaiso	Dec. 3–Apr. 13	70		
China:				
Canton	Nov. 11–Dec. 30	40	6	
Chaochowfu	Mar. 30			Present.
Chenghai	Jan. 29–Apr. 13			Do.
Chungking	Nov. 18–Apr. 27			Do.
Dalny	Mar. 3–Apr. 6	11	2	
Hankow	Jan. 21–Feb. 17	2	1	
Hongkong	Nov. 12–May 4	745	547	
Kityang	Jan. 21–May 18			Do.
Nanking	Dec. 10–May 11			Do.
Shanghai	Dec. 11–Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.
Cuba:				
Habana	Dec. 19–Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12–Apr. 20	63	19	
Egypt:				
Cairo	Dec. 10–Apr. 29	16	2	
Port Said	Jan. 30–Feb. 4	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 14, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
France:				
Havre	Mar. 10-16		4	
Marseille	Jan. 1-Apr. 30		7	Nov. 1-30, 1 death.
Paris	Dec. 3-May 18	133	2	
Germany				Total, Dec. 31-May 18; cases, 187.
Hamburg	Jan. 21-May 18	8		
Kehl	Apr. 1-30	1		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bradford	Apr. 28-May 4	1		
Bristol	Jan. 29-May 18	4		
Liverpool	Mar. 17-Apr. 17	2	1	Case Apr. 13, an American from the s. s. Arabic.
London	Jan. 14-Apr. 20	10	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-Mar. 9	2		
India:				
Bombay	Nov. 19-May 4	1,192	580	
Calcutta	Nov. 19-Apr. 20		49	
Karachi	Apr. 1-6	1	1	
Madras	Nov. 26-Apr. 27	211	83	
Rangoon	Oct. 1-Mar. 31	442	121	
Indo-China:				
Saigon	Nov. 13-Apr. 29	57	11	
Italy:				
Genoa	Dec. 1-Apr. 15	47	2	
Leghorn	Dec. 16-May 11	113	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-May 18	109	1	
Palermo	Nov. 26-May 18	2,667	910	
Rome	Jan. 1-Mar. 31	81	3	
Turin	Jan. 15-May 12	3		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Formosa	Mar. 3-Apr. 20	4		
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-May 7	3	2	Jan. 20, 1 case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru. Fatal case May 7 from s. s. Manchuria from Shanghai.
Korea, province	Jan. 1-Apr. 30			Total, exclusive of Seoul, 843 cases.
Seoul	do	8		
Nagasaki	Feb. 12-18	1		
Nogahama	Mar. 17-23	1		On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-Mar. 3		7	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-May 11	9	5	
Juarez	Dec. 19-June	22	6	
Magdalena	Dec. 23-Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-May 21		17	
Mexico	Nov. 26-Apr. 27	316	154	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	Mar. 23, present in vicinity.
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
San Juan Bautista	May 25	2		
Saric	Jan. 21-27		6	
Santa Ana	Jan. 8	4		
San Luis Potosi	Nov. 12-Mar. 23	8	8	
Tampico	Dec. 1-Apr. 10		16	
Tapachula	Nov. 1-May 4		19	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 14, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands				Third quarter, 1911: Manila, 9 cases; no deaths. Fourth quarter; 1911: 38 cases.
Manila (on arriving vessel)				Apr. 1 to 6, present on the steamers Serantes and Sotolongo; Apr. 2-9, 8 cases among the crew of the United States Army transport Warren, from ports in China and Japan.
Portugal:				
Lisbon	Dec. 9-May 18	70		
Russia:				
Batum	Dec. 1-Mar. 31	2		
Libau	Dec. 17-May 12	4		
Moscow	Nov. 19-May 4	84	10	
Odessa	Nov. 26-May 11	39	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-May 11	71		Oct. 1-Jan. 31: Deaths, 10.
St. Petersburg	Nov. 19-May 11	239	61	
Warsaw	Nov. 5-Mar. 30	437	207	
Siam:				
Bangkok	Nov. 5-Apr. 20		2,281	
Siberia:				
Omsk	Jan. 1-31	7		
South Africa:				
Durban	Jan. 21-Apr. 6	5		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Almeria	Apr. 1-30		1	
Barcelona	Feb. 6-May 18		5	
Cadiz	Nov. 1-Apr. 30		31	
Madrid	Dec. 1-Mar. 31		16	
Malaga	Nov. 1-30		45	
Seville	Dec. 1-Apr. 30		12	
Valencia	Dec. 3-May 11	435	18	
Straits Settlements:				
Penang	Feb. 11-17	1		
Singapore	Nov. 19-Apr. 20	39	15	
Switzerland:				
Cantons—				
Aargau	Apr. 7-13	1		
Oberwalden	Jan. 14-20	1		
St. Gall	Mar. 30-Apr. 6	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Apr. 13		54	
Turkey in Asia:				
Beirut	Dec. 3-May 11	1,560	107	
Turkey in Europe:				
Constantinople	Dec. 4-May 12		216	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1-Apr. 30	15	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	May 25	163,084	68								1			1
Aguascalientes	June 2	40,000	90	4							2	4	9	
Do	June 9		83	2				1	4		1	3	4	
Aix la Chapelle	May 18	157,760	43	6										1
Aleppo	May 25	200,000				4								
Amsterdam	...do....	582,871	120	21						1			4	1
Do	June 1		123	17								1	5	1
Antwerp	May 18	316,604	63	9									3	1
Do	May 25		68	5									5	1
Barcelona	May19-28	591,272	289	26				3		2		3		
Do	June 1		136	12				1						1
Barranquilla	May 25	50,000	24	3						9				
Do	June 1		15							5				
Batavia	May 4	217,630							1					
Beirut	May 18	80,000	20	2										
Belfast	May 25	391,051	128	32							1			8
Bergen	...do....	87,749	21	5								1		
Berlin	May 18	1,071,484	584	92						1	4	14	8	3
Birmingham	May 25	842,512	191								2		4	11
Do	June 1		213								2		5	5
Bombay	May 11	979,445	797	57	90	18		36					7	
Bradford	...do....	289,618	88	2						1	1	2	2	
Do	May 18		79	7						1		1	4	
Do	May 25		73	13						4	1	1	1	
Bremen	...do....	246.850	73	11							3	1	3	1
Bristol	May 25	359,400	114	10						1			10	3
Do	June 1		93	7							1	4	9	2
Brussels	May 25	649,846	211	29						1	2	4	7	
Cairo	May 6	689,439	482	13	1			1	3			5	6	
Catania	May 31	207,000	91	2					2		1	1		
Chemnitz	May 25	296,820	78	4				1				3		2
Christiania	May 19	245,000	92	13									1	
Do	June 1		66	9									2	
Coburg	May 25	24,220	11	3								2		
Colombo	May 4	227,026	119	14						4				
Constantinople	May 26	1,300,000	224	25				16		1	3		8	
Copenhagen	May 11	465,000	164	33							2			2
Do	May 18		148	25									1	4
Dresden	..do.....	557,800	162	21								3		5
Dublin	..do.....	406,536	149	26						1	2	2	8	2
Do	May 25		154	29							1	1	9	2
Edinburgh	..do.....	321,200	99	13								1	2	3
Erfurt	May 18	207,004	29	3								1		
Glasgow	May 31	785,600	257							2	1	3	5	
Ghent	May 25	166,235	35	2								1	1	
Gothenburg	May 18	170,100	40	7										1
Halifax	June 1	46,000	23	3										
Do	June 8		13									2		
Hamburg	May 18	953,079	284	42							4	8	2	
Do	May 25		248	39							1	8		2
Hankow	May 4	850,000								1				
Havre	May 25	136,159	53	12						2		1		
Hongkong	May 4	336,488			122			4		1				
Hull	May 25	282,987	74									2		1
Iquique	May 4	40,000		4	2					2				
Karachi	May 11	157,290	132		65			2					5	
Kharput	..do.....	21,000								1				
Do	May 18	21,000		1						1				
Kobe	May 19	425,023	136							1		1		
Konigsberg	May 18	252,200	79	13										3
Do	May 25		85	6								2		2
Leeds	..do.....	445,568	120	12						1		2	5	
Do	June 1		102	12							1	3	1	
Leipzig	May 18	665,755	176	28							1	2		2
Do	May 25	605,755	140	19								1		
Leith	..do.....	81,000	15	1										
Liege	..do.....	166,911	33	4							2	1	3	
Libau	May 26	84,000									1			
London	May 25	7,340,119	1,593							2	5	10	46	55

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Lubec	May 25	100,000	32	2								1		1
Madras	May 11	518,660	314					2						
Magdeburg	Apr. 27	284,743	104	8							2	1		
Do	May 4		88	10								1	2	
Do	May 11		96	8								3	1	2
Do	May 18		98	8						1			1	1
Manaos	do	52,000	40	4			2							
Do	do		50	5			2							
Mannheim	May 11	201,463	43	7								1		1
Do	May 18		49	6							1			
Mazatlan	June 4	22,000	15	2				1						
Do	May 28		27					2						
Mexico	May 4	719,052	470	15				13	16		5		4	
Do	May 11		456	15				15	8			3	4	2
Monterey	Jan. 21	100,000	45	7						1				
Montreal	June 8	466,197	140	15						2		4		1
Munich	May 18	610,000	195	25								1	2	
Nagoya	May 11	428,740	128									1		
Newcastle on Tyne	May 25	269,193	50	3								1		
Nottingham	May 11	260,000	71	1						1	1		2	3
Do	May 25		83	11								1	4	2
Nueva Laredo	June 1	9,000	9							1				
Odessa	May 11	575,000	170	23							2	2		1
Do	May 18		176	27							1	1		2
Ottawa	June 1	90,000	27	1								1		
Do	June 8			1							1			
Palermo	May 25	340,000	120							3	1			
Port Elizabeth	May 18	31,692	15	2						1				
Port of Spain	do	60,000		9						3				
Prague	do	225,817	88	16				1			2	1	2	
Puerto Mexico	June 1	6,000		2			1			1				
Quebec	June 8	78,200		1										
Rio de Janeiro	May 4	921,987	383	59						1		2	4	3
Rotterdam	May 25	439,526	116							1		2		
Salaverry	May 29	1,630			1									
Santiago de Cuba	June 1	53,614	19	3						1				
Sheffield	May 18	455,000	105	12										
Do	May 25		117	10						1	1			
Singapore	Apr. 27	303,328	220	27	1			1		1				
Southampton	June 1	120,896	36	6									1	2
Stockholm	May 25	346,599	110	23							1		5	1
Stoke on Trent	do	237,153	81	6								3		1
Do	June 1		76	3							1	1	4	3
Tientsin	May 11	465,000	13	5							1	1		
Do	May 18		27	6								1		
Tripoli in Barbary	May 26	50,000	67	5						7				
Trieste	May 25	235,999	84							1			7	
Turin	do	430,770	155	21						2			3	1
Veracruz	June 1	32,000	32	6								1		
Vienna	May 11	2,081,335	722	125						2	12	2	23	4
Do	May 18		669	119						3	8	6	19	3
Vigo	May 25	41,500	19	4								1		
Vladivostock	Apr. 13	90,929	9	2										
Do	Apr. 21		10	4								2	2	
Do	Apr. 28		13											
Warsaw	Apr. 6	821,369	228	36				3		1	6			
Do	Apr. 13		273	33				3		1	5	1		1
Windsor	June 8	17,918	5											

MORTALITY—FOREIGN AND INSULAR COUNTRIES AND CITIES (Untabulated).

ARGENTINA—*Rosario.*—Month of March, 1912. Population, 192,268. Total number of deaths from all causes 355, including diphtheria 8, measles 1, tuberculosis 28, typhoid fever 27.

CANADA—*Sherbrooke.*—Month of May, 1912. Population, 11,765. Total number of deaths from all causes 26, including tuberculosis 6, typhoid fever 1.

DANISH WEST INDIES—*St. Thomas.*—Three months ended March 31, 1912. Population, 11,000. Total number of deaths from all causes 84, including tuberculosis 3. Cases reported: Tuberculosis 9, typhoid fever 1.

FRANCE—*St. Etienne.*—Two weeks ended May 15, 1912. Population, 148,778. Total number of deaths from all causes 143, including scarlet fever 1, tuberculosis 20. Cases reported: Diphtheria 4, scarlet fever 3, typhoid fever 1.

GREAT BRITAIN.—Week ended May 18, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 12.7 per 1,000 of the population, which is estimated at 17,639,816.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 18.6 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Dundalk, viz, 4 and the highest at Tralee, viz, 37 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 15.8 per 1,000 of the population, which is estimated at 2,182,400. The lowest rate was recorded at Falkirk, viz, 6.1 and the highest at Leith, viz, 22.5 per 1,000. The total number of deaths from all causes was 661, including diphtheria 3, measles 32, scarlet fever 1, typhoid fever 2.

HAWAII—*Honolulu.*—Five weeks ended June 1, 1912. Population, 39,306. Total number of deaths from all causes 79, including tuberculosis 10, typhoid fever 2. Cases reported include: Diphtheria 1, measles 1, tuberculosis 20, typhoid fever 5. Three cases of leprosy were reported.

ITALY—*Florence.*—Month of April, 1912. Population, 242,403. Total number of deaths from all causes 381, including diphtheria 3, measles 14, tuberculosis 49, typhoid fever 2. Cases reported: Diphtheria 28, measles 259, scarlet fever 16, tuberculosis 20, typhoid fever 8.

Genoa.—Two weeks ended May 15, 1912. Population, 256,673. Total number of deaths from all causes 138, including diphtheria 6, measles 1, tuberculosis 20, typhoid fever 1. Cases reported: Diphtheria 14, measles 5, scarlet fever 2, tuberculosis 24, typhoid fever 6.

PORTO RICO.—Five weeks ended June 1, 1912.

Ponce.—Nineteen deaths from tuberculosis were reported. Cases reported were: Tuberculosis 25, typhoid fever 1, hookworm disease 303. There was 1 death from hookworm disease.

San Juan.—Six deaths from tuberculosis were reported. Cases reported were: Diphtheria 2, tuberculosis 56, typhoid fever 11, hookworm disease 2.

RUSSIA—*Riga.*—Month of March, 1912. Population 269,001. Total number of deaths from all causes 779, including diphtheria 4, measles 2, scarlet fever 9, smallpox 4, typhoid fever 7. Cases reported: Diphtheria 45, measles 92, scarlet fever 51, smallpox 13, typhoid fever 14, typhus fever 2.

SPAIN—*Seville.*—Month of January, 1912. Population, 158,235. Total number of deaths from all causes 425, including diphtheria 6, tuberculosis 65.

VENEZUELA—*La Guaira.*—Two weeks ended May 15, 1912. Population, 10,000. Total number of deaths from all causes 18, including tuberculosis 3. Cases reported: Tuberculosis 3.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS

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NOTES ON MOSQUITO ERADICATION.

By George W. McCoy,[1] Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

These notes are based upon the experience of a rather extensive antimosquito campaign undertaken in the city of Honolulu, Hawaii. The work was directed particularly against mosquitoes of the genus *Stegomyia*, or day mosquitoes, but in addition an effort was made to reduce as far as possible the number of night mosquitoes (*Culex*).

There seems to be no doubt that mosquitoes were unknown in the Hawaiian Islands prior to 1826, at which time they were introduced by a whaling vessel. There are but three species of the insects reported from the islands: *Stegomyia calopus*, *Stegomyia scutellaris*, and *Culex pipiens*.

Antimosquito work in Honolulu presented serious difficulties on account of certain local conditions. These were, first, the very large area covered by the city, 45,000 acres, in proportion to the population, 50,000; second, the fact that scattered tracts of land constituting about one-third of the area of the city were given over to the growing of rice and taro, both of which require the constant, or almost constant, flooding of the land; third, the enormous number of water-holding trees and plants.

The work used as the basis of these notes had to do only with the seeking out and abolishing of breeding places. The destruction of adult mosquitoes did not form a part of the work.

DISTRIBUTION OF DIFFERENT SPECIES OF MOSQUITOES.

Mosquitoes of the genus *Culex* were found breeding in all parts of the city, and, true to their habits elsewhere, in collections of water of every description. Swamps, puddles, house gutters, catch basins in the storm-sewer system, rice and taro fields, tin cans, bottles, holes in trees, water-holding plants, and toilet fixtures all furnished specimens of the *Culex* larvæ. Both species of *Stegomyia* were found in all sections of the city. The following tabulation of the breeding places of *Stegomyia* larvæ, collected early in the campaign, was prepared by Passed Asst. Surg. Edward R. Marshall, who made the identifications:

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[1] Detailed as sanitary adviser to the governor of Hawaii.

Location.	Stegomyia calopus.	Stegomyia scutellaris.	Location.	Stegomyia calopus.	Stegomyia scutellaris.
Storm sewer catch basin	1	2	Hole in tree	2	15
Watering trough	3	....	Barrel	6	5
Street gutter	2	8	Bathtub	....	1
House gutter	83	72	Cesspool	....	2
Hole in rock	3	....	Bucket	....	2
Flower pot	1	1	Tin dipper	....	1
Tin can	8	6	Crock	....	1
Iron pot	1	....	Keg hanging on tree	....	1
Bottle	1	....	Swamps	....	1
Tin pan	1	....	Puddle	....	1
Water-holding plants	2	6	Hollow stump	....	1
Tank	1	....			

This table shows a disproportionately large number of house gutters furnishing larvæ, as at the time the identifications were made we were paying particular attention to these breeding places.

ANTILARVÆ AGENTS AND PROCEDURES EMPLOYED.

Coal oil.—Both crude and refined petroleum were employed. The crude oil available was that obtained from the oil fields of California. It was found to have a very limited field of usefulness on account of the lack of any tendency to spread over the surface of the water. Even when sprayed on a pool the oil was apt to remain in the form of drops. On many occasions living larvæ were found in collections of water that seemed to be satisfactorily covered by crude oil. Refined petroleum gave much better results, as it distributed itself quite well where the water was free from vegetation. In general oil was employed only on temporary collections of water and upon such permanent collections as it was found impracticable to deal with in any other manner.

Larvicide.—This agent was prepared in large quantities and used as a substitute for petroleum. The fluid was made by emulsifying crude carbolic acid with rosin and caustic soda. It was not observed that it presented any advantages over the refined petroleum except that perhaps it was a little more prompt in destroying larvæ and was a trifle cheaper.

Draining and filling.—Many acres of swampy land were drained, while others were filled. These are, of course, the ideal ways to abolish mosquito-breeding places, and should always be employed where circumstances permit.

Larvæ-destroying fish.—In 1905 Dr. David Starr Jordan, of Stanford University, Palo Alto, Cal., advised the stocking of the waters of Hawaii with larvæ-destroying fish. As a result of this advice the Territorial government brought about 400 of these fish (*Gambusia affinis*, *Fundulus grandis*, *Mollienesia latipinna*) from Texas. They have multiplied rapidly and are now found in almost all streams and ponds in the Territory. It is not too much to say that these little fish have proven more valuable than any other single agent in keeping the mosquitoes in the islands within bounds. It was astonishing how promptly they eradicated the larvæ from any collection of water in which they were placed, provided they could gain access to all parts of it. In many cases it was necessary to clear the vegetation out of the pond or other large collection of water in order to permit the fish to get about freely. In other cases, where the water was shallow or in pockets, the flooding of the area so that the water was deep enough to permit the fish to reach every part proved sufficient to clear the place of larvæ. Oil or lavicide is fatal to fish and should not be placed in any collection of water that has fish in it or that is to be stocked with them. Fish have been used with great satisfaction in tanks, barrels, watering troughs, etc.

Flooding with salt water.—There were a few low places so situated that it was possible to lead sea water into them, converting a fresh-water pool into a brackish one in which the mosquitoes found in Hawaii do not breed.

METHOD OF TREATING DIFFERENT BREEDING PLACES.

Tin cans, bottles, etc.—As Honolulu does not have a system of free garbage collection, every vacant lot and many of the occupied ones were liberally sprinkled with tin cans, bottles, fruit jars, old kerosene cans, etc. These were buried or collected and hauled to a garbage dump. It is necessary to cover the dump with earth or to put the cans, etc., in salt water or one may merely transfer a nuisance from one place to another.

Pools and swamps.—These were treated by filling, draining, oiling, or the introduction of larvæ-destroying fish. When necessary the vegetation was removed to permit oil to spread or to allow the fish to reach every part. This was sometimes a task requiring much work.

There were a good many cases where swampy land could be converted from a breeding place into one quite free from mosquito larvæ by the process of extensive ditching. The earth that was taken out to make the ditches was piled in oblong mounds, changing a place that had previously been swamp into one where the earth and water were well defined and separate, thus permitting the fish to have access to every part where larvæ could exist.

As a large part of Honolulu is practically at sea level, many swamps and ponds that appear in every respect to be ideal breeding places contain no larvæ on account of the water being brackish. As it was important that efforts and funds should not be exhausted on work that was needless from an antimosquito point of view, it was made an invariable rule that, no matter how favorable a locality looked as a breeding place, no work was done on it if repeated inspections failed to show the presence of larvæ.

Irrigation of sugar cane.—The irrigation of sugar cane is carried on in such a way that the only place where mosquitoes breed in a cane field is in the ditches. The most feasible way of dealing with them where the grade is not sufficient to keep the water in motion is to stock the ditches with fish.

Taro patches.—Taro (*Colocasia antiquorum*), a tuber from which "poi," the principal food of the Hawaiians is made, grows under water. The depth of the water is from 2 to 6 inches, ample to permit fish to get about freely. The stocking of the patches with fish is the only practicable means of dealing with taro cultivation. The edges of the pond must be kept free from grass and weeds. Taro patches that are in use give comparatively little trouble, but often those that are abandoned have water standing in pockets and are apt to be overgrown with alien vegetation. Filling or draining is the best treatment for these.

Rice fields.—Rice cultivation is one of the important industries of Honolulu. As it is ordinarily carried on it results in large crops of mosquitoes at certain periods. It is customary during the time that the field is being prepared for plowing and while the plowing is in progress to keep the land partially covered with water, which, of course, affords ideal mosquito-propagating conditions. The only solution we have found is to require the water to be kept deep enough to permit fish to gain access to every part. After the rice is planted ample water is kept on the land.

Pasture lands.—The many acres of pasture land in the city have given much trouble. The hoofprints of animals hold water and form excellent breeding places. Where draining is impracticable there is no way of dealing with these except by oiling or treating with larvicide. Even this is not satisfactory, as the little pools are easily overlooked and new ones are made hourly.

Banana plantations.—When banana shoots are started it is customary to have the little mound of earth in which the shoot is placed surrounded by a moat of water about 6 inches deep, 8 or 10 inches wide, and 3 or 4 feet in diameter. These moats form ideal breeding places. The only practicable way to treat them is to throw in enough earth to change the contents into mud.

Water-holding plants.—Among the plants that hold water bananas and several species of lilies may be mentioned. Whether mosquitoes breed often enough in the former to justify their destruction except at times of emergency is a much-disputed point. The writer believes that the removal of banana plants will always aid materially in mosquito eradication. Lilies and certain other plants that are common in Honolulu very often have a space between the stalk and the base of the leaf in which larvæ are found. In one case 25 out of 27 spider lilies on one premises had larvæ in them. The only way of dealing with water-holding plants permanently is to cut them down and grub out the roots. It was observed that when water-holding pockets in plants were filled with dust, dirt, leaves, etc., the water evaporated rapidly, and consequently there was no danger of mosquitoes breeding in them. In a few cases we have treated water-holding plants by putting sawdust in the pockets and have found that this served very well to facilitate the drying. This plan is not recommended, as it does not permanently abolish breeding places, but it may be used where people are unwilling to sacrifice the plants.

Sewer system.—Honolulu has "separate" sewer systems, and mosquito-breeding places have been found in each of the systems. The sanitary sewers have perforated iron manhole covers. Under these covers drip pans are suspended to catch street dirt that would otherwise fall into the sewer. For a time these drip pans were oiled, but it was finally concluded that probably they served no useful purpose, and the pans were removed.

The storm sewers had their chief source of trouble in the catch basins which receive the street drainage. These are practically brick and cement boxes, about 3 feet square and from 3 to 5 feet deep.

About a foot from the bottom is an outlet pipe communicating with the sewer main. As a result of this arrangement of the outlet pipe these catch basins generally hold about a foot of water, which forms one of the most important mosquito-breeding places. Several varieties of drip cans were tried for the purpose of keeping the water in the basin constantly covered with oil. It was found, however, to be more satisfactory and more economical to have the catch basins oiled by hand about once a week, 50 cubic centimeters of refined petroleum being placed in each basin. Partial blocking of the outlet pipe running from the catch basin to the main sewer frequently caused the water to stand in this pipe. The only way to deal with these collections was to have the catch basin emptied and the obstruction removed. This failing, oil could be applied to the water in the outlet pipe.

Other difficulties with the storm sewers were the sagging of sections or partial damming, either condition allowing water to stand. Cleaning and structural changes such as would be required to remedy these troubles did not come within our province. The keeping of these collections of water in the storm sewers oiled was not regarded as feasible.

Roof gutters.—The most difficult and at the same time one of the most important parts of the work of abolishing breeding places was in connection with house gutters that held water. These very frequently contained larvæ. Oiling and cleaning are but temporary measures. The remedy advised was to remove the gutters whenever practicable. Many of them sag, leak, or otherwise fail to fulfill the functions for which they were intended. A board of architects appointed under the authority of the Territorial board of health to investigate this subject recommended that gutters have a fall of at least 1 inch in 16 feet and that down spouts be provided along every 16 feet of the length of the gutter. My own observation has led me to believe that the fall should be greater than this.

Puncturing gutters was practiced to some extent. This is satisfactory only if holes not less than an inch in diameter are made along the whole water-containing part of the gutter. Holes made with large nails are useless, as they soon become clogged. Screening of gutters is not to be recommended as it is expensive and often fails to keep mosquitoes out. In a good many cases nothing could be done with gutters but to see that water was not allowed to stand in them.

Houses in the Tropics should be constructed with eaves that overhang enough to obviate the necessity for gutters.

Water barrels.—The rule was to oil any barrels in which larvæ were found. This usually induced the householder to keep them screened.

Cesspools.—Cesspools with defective covers form excellent breeding places. The remedy is a mosquito-proof cover (usually wood covered with earth) with a screened vent pipe. As a temporary measure oiling is sufficient. Overflowing cesspools cause a great deal of trouble. The remedy is to have the cesspool emptied.

Cavities in trees.—Holes in trees were frequently found to be breeding places. A very common tree in Honolulu, the kiawe or algaroba (*Prosopis juliflora*), is likely to have a cavity where large branches are given off, at forks, etc. To remedy these conditions the cavities were filled with broken rock or earth and a covering of cement placed over the filling.

Throughout the work one thing that impressed us was the fact that the majority of collections of water on the ground were man made. For example: Many small swamps were due to an overflowing or leaky cesspool; pools in streets were often due to broken water pipes; a swampy yard was often caused by the waste water from a washhouse. Breeding places due to seepage from natural causes were rare.

TREATMENT OF VESSELS ARRIVING AT NEW YORK FROM WEST INDIAN AND SOUTH AMERICAN PORTS.

The health officer of the port of New York has issued the following special order to boarding officers at that port regarding the treatment of vessels coming from ports in the West Indies and South America:

SPECIAL ORDER TO BOARDING OFFICERS RELATIVE TO BUBONIC PLAGUE.

All passengers and members of crews on vessels entering this port from Porto Rican ports, Haitian ports, and ports in the West Indies and in South America to the southerly of Porto Rico, shall be individually examined with the utmost care for symptoms of bubonic plague.

All hides, including animal skins of every character, carried as cargo on such vessels shall be subjected to disinfection in accordance with general order No. 30, if practicable, on board the vessel at quarantine.

All holds of vessels entering this port from ports on the island of Porto Rico, the island of Trinidad and the port of La Guaira, Venezuela, shall be subjected to disinfection, after the discharge of all cargo therefrom, in this port by a representative of this department or under the direction and supervision of this department. For this purpose the provisions of general order No. 29 are hereby extended with respect to such vessels so as to provide for disinfection after every voyage. If the existence on board of perishable merchandise, liable to serious damage by the use of disinfectants, shall make the fumigation of hides at quarantine impracticable, the master of such vessel shall, before being admitted to pratique, sign a written agreement to submit such hides to fumigation at the dock, after the discharge of such parts of his cargo as may be liable to injury from the use of fumigants, and no vessel from ports on the island of Porto Rico, the island of Trinidad, and the port of La Guaira, Venezuela, shall be admitted to pratique until the master of such vessel shall have signed a written agreement to submit the hold of his vessel to fumigation after the discharge of his cargo, and to notify this department of the readiness of his vessel for such disinfection.

This order will remain in effect until the amelioration of plague conditions at the ports mentioned, and adjoining ports shall justify its modification.

JOSEPH J. O'CONNELL,
Health Officer, Port of New York.

June 20, 1912.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

EAST PROVIDENCE (TOWN), R. I.

LODGING AND TENEMENT HOUSES AND BUILDINGS LEASED AS DWELLINGS—INSPECTION, CARE, AND MAINTENANCE.

SEC. 12. Every owner or keeper of a lodging house and every owner, lessee, and occupant of a tenement house or other building leased for a dwelling shall thoroughly cleanse all and every part of such house or building and shall also thoroughly cleanse every yard, court, passage, area, or alley connected with or belonging to the same to the satisfaction of the town council whenever, in the opinion of said town council, it shall be necessary for the health of the occupants or the public health.

SEC. 13. No vault, cellar, or underground room shall be let or occupied separately as a dwelling, nor in a tenement or lodging house as a place of lodging or sleeping. A cellar shall mean any basement or lower story of any building or house of which one-half or more of the height from the floor to the ceiling is below the level of the ground adjoining.

SEC. 14. No owner of any building or part thereof shall lease or let or hire out the same or any part thereof to be occupied by any person, or allow the same to be occupied if said building or any part thereof shall be inadequate or defective in respect to strength, protection, ventilation, light, sewerage, or to any other usual, proper, or necessary provision or precaution for the security of life and health, nor unless said building and every part thereof shall be in all respects in a condition of cleanliness or wholesomeness.

SEC. 15. The town council may order the vacation of any building when satisfied that it is unfit for a dwelling, because infected or because in any way dangerous to the health of the occupants. A notice of such vacation must be served on the occupants of such building, and also served on the owner, agent, or lessee. And such notices shall be served by any police constable of the town. And if the person or persons so notified, or any of them, shall neglect or refuse to remove from and quit such building within the time specified in the notice the health officer is hereby authorized and empowered forcibly to remove them when so ordered by the town council.

SEC. 16. For purposes of sanitary inspection, the health officer, and every person authorized by him, shall have free access to any part of every building and premises within the town.

[From ch. 4 of an ordinance adopted Aug. 2, 1911.]

ELGIN, ILL.

MEDICINE SAMPLES—DISTRIBUTION OF.

SECTION 1. No person shall be permitted to give away, deposit, or otherwise distribute any sample package, parcel, box, or other quantity of any nostrum, proprietary medicine, or other material of an alleged medicinal character or claiming to be a curative agency by means of depositing or leaving same in any hallway, private area, or yard, or on any street, alley, or public ground in the city.

SEC. 2. Any person violating any of the provisions of this section shall be fined not less than $5 nor more than $50 for each offense.

[Ordinance adopted Sept. 30, 1911.]

OIL CITY, PA.

NUISANCES.

RULE 15. No bone or horse boiling establishment shall be maintained or operated within the limits of the city.

RULE 16. It shall be unlawful for any person, persons, or corporation to construct or use any slaughterhouse or to slaughter animals of any kind in any building or any place within the limits of the city.

RULE 17. The keeping of pigs, hogs, or swine shall not be permitted within the limits of the city.

RULE 18. It shall be unlawful to keep live poultry of any kind or any other kind of live stock in any cellar or basement or under any house or building within the limits of the city.

RULE 19. It shall be unlawful to keep or kill live stock or poultry of any kind in any cellar or basement or under any building used for a market place, nor shall live stock or poultry be kept or killed in close proximity to any market without written permission of the board of health, which permission may be revoked upon recommendation of the health officer for good and sufficient cause.

RULE 20. The owner or occupant of any cellar, basement, or other building in which permission has been given to prepare live stock or poultry for the market shall keep or cause the same to be kept in a clean and sanitary condition, and cause all offal, blood, waste food, garbage, refuse, and all unwholesome or offensive matter to be removed therefrom at least once every 24 hours, and shall make provision for the proper drainage of such places, and shall at all times keep all woodwork (except floors and counters) in such places thoroughly painted or whitewashed; and the floors thereof shall be so constructed as to prevent blood or foul liquid or washings from seeping through and settling in the earth beneath.

RULE 21. The rendering of lard, tallow, or meat scraps of any description in or near any market within the limits of the city is forbidden without written permission of the board of health and under such conditions as the board may provide, and said written permission may be revoked for cause by the board upon recommendation of the health officer.

[Regulations board of health, adopted Oct. 18, 1911.]

ROCKFORD, ILL.

BAKERIES—INSPECTION OF.

All bakeries in the city of Rockford shall be subject to inspection from time to time. The following score card shall be used as a basis of this inspection:

SANITARY INSPECTION OF BAKERY.

Name of bakery, ——— ———. Address, ——— ———.
Owner, ——— ———. Date of scoring, ———. Score, ———.

	Perfect score
Room free from contaminating surroundings	4
Tight, smooth floors	2
Tight, smooth walls and ceiling	2
Light (sunlight, 4; electric light, 2; gas light, 1)	4
Ventilation	2
Large, convenient sinks	4
Convenient furnishings and machinery	2
Cleanliness of floors	6
Cleanliness of walls	4
Cleanliness of ceiling	2
Cleanliness of tables and furnishings	10
Cleanliness of sinks, 4; shelves, 2	6
Utensils—mixers	4
Utensils—pans, 2; knives and cutters, 2	4
Clean cloths for rolling jelly rolls, etc	2
Freedom from flies, cockroaches, and other insects	12
Attendants' aprons and overalls	4
Attendants' personal cleanliness	4

Storage of materials—flour	2
Storage of materials—milk, eggs, etc	2
Washroom and lockers	2
Water-closet	2
Back yard of bakery	2
Disposal of retuse	4
Storage of baked goods	4
Transportation—wagon	2
Transportation—drivers and methods	2
	100

After the inspection has been made a copy of the score card shall be left with the owner or manager of the bakery, and such instructions as may be found necessary will be sent in written form from the office of the department of health.

All bakery wagons in the city of Rockford shall be stopped from time to time by our inspector, and the condition of the trays, shelves, floor, baskets, cleanliness of the driver, and method of handling the products shall be investigated and reported to the department of health. Written orders shall be served on the owner of wagons found faulty.

[Regulation, department of health, adopted September, 1911.]

SACRAMENTO, CAL.

FOODSTUFFS—PROTECTION OF.

SECTION 1. The manufacture, production, preparation, compounding, packing, selling, offering for sale, or keeping for sale within the city of Sacramento, or the introduction into this city from any other town, city, or county of any article of food, liquor, drugs, or medicines which is adulterated, mislabeled, or misbranded within the meaning of this ordinance is hereby prohibited. Any person, firm, company, or corporation who shall import or receive from any other town, city, or county, or, having so received, shall deliver for pay or otherwise, or offer to deliver to any other person, any article of food, liquor, drugs, or medicines, adulterated, misbranded, or mislabeled within the meaning of this ordinance, or any person who shall manufacture or produce, prepare or compound, or pack or sell, or keep for sale in the city of Sacramento any such adulterated, mislabeled, or misbranded food, liquor, drugs, or medicines, shall be quilty of a misdemeanor.

SEC. 2. The term "food," as used in this ordinance, shall include all articles used for food, drink, liquor, confectionery, or condiment by men or other animals, whether simple or compound or mixed.

SEC. 3. The standard of purity of food and liquor (except as hereafter provided) shall be that proclaimed by the Secretary of the United States Department of Agriculture.

SEC. 4. Food shall be deemed adulterated within the meaning of this ordinance in any of the following cases:

ARTICLE 1. If any substance has been mixed or packed, or mixed and packed with the food, so as to reduce or lower or injuriously affect its quality, purity, strength, or food value.

ART. 2. If any substance has been substituted wholly or in part for the article of food.

ART. 3. If any essential or valuable constituent or ingredient of the article of food has been wholly or in part abstracted.

ART. 4. If it be mixed, colored, powdered, coated, or stained in any manner whereby damage or inferiority is concealed.

ART. 5. If it contain any added poisonous or other deleterious ingredient and, except in the case of butter, analine colors.

ART. 6. If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal or vegetable unfit for food, whether manufactured or not, or if it is the product of a diseased animal or one that has died otherwise than by slaughter: *Provided*, that an article of liquor shall not be deemed adulterated, mislabeled, or misbranded if it be blended or mixed with like substances, so as not to injuriously reduce or injuriously lower or injuriously affect its quality or strength or purity.

Art. 7. In the case of confectionery: If it contain terra alba, barytes, talc, chrome yellow, aniline colors, or other poisonous colors or flavor or other ingredient deleterious or detrimental to health, or any vinous, malt, or spirituous liquor or compound or narcotic drug, or if it be polished, powdered, or coated or in any manner treated whereby damage is concealed, or if it is made to appear better or of greater value than it is.

(*a*) All candies, figs, prunes, dates, popcorn, shelled nuts, dried and evaporated fruits, dried or evaporated berries shall be inclosed so as to protect them from the dust and dirt.

(*b*) All fruits, vegetables, and berries must be placed not less than 14 inches from sidewalk or floor.

Art. 8. In the case of pickles and fruit sauces: If they contain other sweetening matter than pure sugar.

Art. 9. In the case of vinegar: If it be artificially colored.

Art. 10. If it does not conform with the standard of purity as proclaimed by the Secretary of the United States Department of Agriculture.

Art. 11. In the case of meats, manufactured or otherwise: If they contain preservatives other than pure spices, sugar, vinegar, salt, wood smoke, and, pending further inquiry, saltpeter.

Art. 12. Cream shall be termed adulterated when it contains less than 20 per cent of butter fat or when antiseptics or any substance or substances have been added.

Art. 13. That no meats shall be transported in open wagons or vehicles without being covered or otherwise perfectly protected from dust, dirt, and flies.

Sec. 5. The term "drug," as used in this ordinance, shall include all medicines and preparations recognized in the United States Pharmacopœia or National Formulary and the regulations and definitions adopted for the enforcement of the national food and drug act of June 30, 1906, shall be adopted by the city board of health for the enforcement of this ordinance.

Sec. 6. Drugs shall be deemed adulterated within the meaning of this ordinance in any of the following cases:

(*a*) If when a drug is sold under or by a name recognized in the United States Pharmacopœia or National Formulary it differs from the standard of strength, quality, or purity as determined by the test laid down in the United States Pharmacopœia or National Formulary official at the time of the investigation: *Provided*, That no drug defined in the United States Pharmacopœia or National Formulary shall be deemed adulterated under this provision if the standard of strength, quality, or purity be plainly stated upon the package thereof, together with the standard of strength, quality, or purity recognized by the United States Pharmacopœia or National Formulary, although it differ from that determined by the test laid down in the United States Pharmacopœia or National Formulary.

(*b*) If the strength or purity fall below the professed standard or quality under which it is sold.

Sec. 7. That the term "misbranded" as used herein shall apply to all articles of food or articles which enter into the composition of food, or to all drugs and medicines the package or label of which shall bear any statement, design, or device regarding such article of food, or drugs, or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the city, city and county, county, town, State, Territory, District of Columbia, or foreign country in which it is manufactured or produced.

Sec. 8. Food, liquor, and drugs shall be deemed mislabeled or misbranded within the meaning of this ordinance in any of the following cases:

(*a*) If it be an imitation of or offered for sale under the distinctive name of another article of food or drug.

(*b*) If it be labeled or branded or colored so as to deceive or mislead, or tend to deceive or mislead, the purchaser, or if it be falsely labeled in any respect, or if it purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part and other contents shall have been placed in such package.

(*c*) If in the case of drugs and medicines the package as offered for sale at retail or wholesale fail to bear a statement on the label of the per cent of volume of alcohol or the quantity of any morphine, opium, cocaine, heroin, alpha, or betaeucaine, chloroform, cannabis indica, chloral hydrate, acetanilid, or any derivatives or any preparation of these substances contained therein, except when prescribed by a licensed physician, licensed dentist, or licensed veterinary surgeon.

(*d*) If in the case of food and drugs in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of such package.

(*e*) All packages of food must bear the true name of the manufacturer.

If, having no label, it is an imitation or adulteration or is sold or offered for sale under a name, designation, description, or representation which is false or misleading in any particular whatever; and, in the case of eggs and poultry, if they have been kept or packed in cold storage or otherwise preserved, they must be so indicated by written or printed label or placard plainly designating such a fact when offered or exposed for sale.

Sec. 9. The term "package" as used in this ordinance shall be construed to include any wrapper, phial, bottle, jar, demijohn, carton, bag, case, box, or barrel, or any receptacle, vessel, or container, of whatsoever material or nature, which may be used by a manufacturer, producer, jobber, packer, or dealer for inclosing any article of food or drugs.

Sec. 10. The possession, sale, or offering for sale of any adulterated, mislabeled, or misbranded food, liquor, or drug by any manufacturer, producer, jobber, wholesaler, packer, dealer, or broker, commission merchant, or agent, or employee, shall be prima facie evidence of the violation of this ordinance.

Sec. 11. Milk is the fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within 15 days before and 10 days after calving, and containing not less than 8½ per cent of solids not fat and not less than 3½ per cent of butter fat and containing not more than 100,000 bacteria per cubic centimeter.

(*a*) No person, persons, firm, or corporation shall have for sale, or offer for sale, or keep for use, or give away, any milk or milk product or compound in which milk or a product is used, which is obtained from any cow or cows which, after being tested for tuberculosis, are found to be affected with this disease, inspection for tuberculosis being conducted in the usual manner and at any time deemed necessary by the city board of health.

(*b*) Ice cream is a frozen product, made from cream, milk, and sugar, with or without natural flavoring, containing not less than 14 per cent of butter fat; and if thickening is used it must be of a harmless vegetable substance, and such fact must be clearly stated on the label.

Sec. 12. For the purpose of carrying out the provisions of this ordinance, the Sacramento city board of health shall cause to be made by the analyst, food and market inspector and deputies, inspections, examinations, and analyses of food and drugs suspected of being adulterated, mislabeled, or misbranded.

Sec. 13. For the purpose of carrying out the provisions of this ordinance, the food and market inspector, city analyst, and deputies shall qualify as special police.

Sec. 14. It shall be a misdemeanor for any person to refuse to sell any deputy, the food and market inspector, or analyst any sample of food, liquor, or drugs upon tender of the market price thereof, or to withhold from him information where such food, liquor, or drug is kept; or withholding such information from such officer shall, upon conviction, be punished as provided in section 19 of the Penal Code of the State of California.

Sec. 15. It shall be the duty of the city attorney of the city of Sacramento to prosecute all violations of the provisions of this ordinance.

Sec. 16. Any person, firm, or corporation violating any of the provisions of this ordinance shall be guilty of a misdemeanor and, on conviction, shall be punished by a fine of not less than $25 and not more than $500, or shall be imprisoned in the county jail for a term not exceeding six months, or by both such fine and imprisonment. Food, liquors, and drugs found to be adulterated, mislabeled, or misbranded within the meaning of this ordinance may, by order of any court or judge, be seized and destroyed.

Sec. 17. No dealer shall be prosecuted under the provisions of this ordinance when he can establish a guaranty, signed by the wholesaler, jobber, manufacturer, or other party residing in the United States from whom he purchased such article, to the effect that the same is not adulterated, mislabeled, or misbranded within the meaning of this ordinance, designating it. Said guaranty to afford protection must contain the name and address of the party making the sale of such article to said dealer, and an itemized statement showing the articles purchased, or a general guaranty may be filed with the Secretary of the United States Department of Agriculture by the wholesaler, manufacturer, or jobber, or any other party in the United States, and be given a serial number, which number shall appear on each and every package of goods sold under such guaranty with the words "Guaranteed under the food and drugs act, June 30, 1906."

[Ordinance No. 11, adopted Dec. 4, 1911.]

SAN FRANCISCO, CAL.

WIPING RAGS MADE FROM CAST-OFF CLOTHING—CLEANSING AND STERILIZATION OF.

SECTION 1. It shall be unlawful for any person, firm, or corporation to sell or offer for sale soiled cloths or rags, or soiled or disused or cast-off underclothing, garments, bedding, bedclothes, or parts thereof for use as wiping rags unless the same have been cleansed and sterilized by a process of boiling continuously for a period of 40 minutes in a solution containing at least 5 per cent of caustic soda.

SEC. 2. It shall be unlawful for any person, firm, or corporation employing mechanics, workmen, or laborers to furnish or supply such employees for use as wiping rags soiled cloths or rags, or soiled or disused or cast-off underclothing, garments, bedclothes, bedding, or parts thereof, unless the same have been cleansed and sterilized in the manner herein prescribed.

SEC. 3. Wiping rags within the meaning of this ordinance are cloths and rags used for wiping and cleaning the surfaces of machinery, machines, tools, locomotives, engines, motor cars, automobiles, cars, carriages, windows, furniture, and surfaces of articles in factories, shops, steamships, and steamboats, and generally in industrial employments, and also used by mechanics and workmen for wiping from their hands and bodies soil incident to their employment.

SEC. 4. It shall be unlawful for any person, firm, or corporation to establish or maintain a laundry for cleaning or sterilizing wiping rags or soiled cloths or rags or soiled and disused or cast-off clothing, garments, underclothing, bedclothes, bedding, or parts thereof, within the limits of the city and county of San Francisco, without having first complied with the ordinances of the said city and county regulating the conducting of public laundries and obtain a permit therefor as required by section 12 of this ordinance.

SEC. 5. No charge whatever shall be made or compensation or fee collected or received for the performance of any services required by the provisions of this ordinance, or the issuance of certificates or permits, but all such services shall be performed free of charge.

SEC. 6. All soiled cloths and rags and soiled and disused and cast-off underclothing, garments, bedclothes, bedding, and parts thereof, before being offered for sale or sold or furnished for use as wiping rags, must be subjected to a process of sterilizing approved by the board of health of the city and county of San Francisco, including the process of boiling for a period of 40 minutes in a solution of caustic soda mentioned in section 1. Before washing all sleeves, legs, and bodies of garments must be ripped and opened and all garments made into flat pieces.

SEC. 7. It shall be unlawful for any person, firm, or corporation to wash, cleanse, sterilize, or dry disused or cast-off clothing, garments, underclothing, bedclothes, bedding, or parts thereof, or soiled cloths or rags in the same building or by the same machine or appliances by which clothing, bedding, or other articles for personal or household use are laundered.

SEC. 8. Each package or parcel of wiping rags must before being sold be plainly marked "Sterilized Wiping Rags," with the number and date of the certificate given by the health officer of the said city and county for the conducting of a laundry in which the rags contained in such package or parcel were cleansed and sterilized or with the name and location of the laundry in which said rags were cleansed and sterilized.

SEC. 9. Wiping rags imported into this city and county from other cities, counties, or States shall not be used, sold, or offered for sale unless they have been cleansed and sterilized as required by this ordinance, or unless such imported rags are inspected by the health officer and a certificate given by him that such rags have been inspected and cleansed and sterilized as required by this ordinance.

SEC. 10. The health officer shall inspect all wiping rags and give a certificate to that effect when the rags inspected have been cleansed and sterilized as required by this ordinance. Such certificate shall also state the date of inspection, the quantity and number of parcels inspected, the name of the owner, and the place where the wiping rags were cleansed and sterilized.

SEC. 11. All persons having wiping rags in their possession for sale or for use shall, upon demand of any officer of the department of public health or any police officer, exhibit such wiping rags for inspection and give all information as to where and from whom said wiping rags were obtained.

SEC. 12. No person, firm, or corporation shall engage in the business of laundering, cleaning, or sterilizing cloths or material for wiping rags, or selling wiping rags without a permit therefor from the board of health. Such permit shall be granted as of course on the first application and may be revoked by the board of health for violation by the holder of any of the provisions of this ordinance. Subsequent permits to a person, firm, or corporation in place of a permit revoked may be granted or refused, at the discretion of the board. The board of health shall keep a register of all persons engaged in laundering, cleaning, sterilizing, or selling wiping rags, and shall enter therein the place of business, the date of issue, and the revocation of permit.

PENALTY.

SEC. 13. Any person, firm, or corporation who shall violate any of the provisions of this ordinance shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not to exceed $500 or by imprisonment in the county jail for not more than six months, or by both such fine and imprisonment.

SEC. 14. The police authorities are hereby directed to have the provisions of this ordinance enforced.

SEC. 15. This ordinance shall take effect and be in force 10 days after its passage.

In board of supervisors, San Francisco, September, 1911.

[Ordinance adopted September, 1911.]

UNION (TOWNSHIP), N. J.

SLAUGHTERHOUSES.

SEC. 33. That in every slaughterhouse hereafter constructed or maintained within the township of Union the floors shall be paved with asphalt or some other impervious material, properly sloped to a well-trapped and permanently graded inlet, having a direct communication with a sewer; the walls thereof shall be covered to a height of 7 feet with some smooth, impervious material; the yards, apartments, and pens connected therewith shall be paved with brick or stone laid in cement or concrete, or some other impervious material, and properly sloped to a well-trapped and permanently graded inlet having a direct communication with a sewer. Every slaughterhouse shall be supplied with an adequate water supply and such arrangement of hose or pipes as will enable the walls, floors, and yards to be effectually washed; and every slaughterhouse and the apartments and pens connected therewith shall be properly ventilated according to the direction and satisfaction of the board of health. Any person or persons or corporations failing to comply with the directions, or offending against or violating any of the provisions of this section shall, on conviction thereof, forfeit and pay a penalty of $50 for the first offense, and for the second and each subsequent offense the sum of $100.

SEC. 34. That the owners, agents, lessees, or occupants of all slaughterhouses located within this township are required to provide movable receptacles with tightly fitting cover for the purpose of receiving and conveying away blood, filth, offal, and other offensive matters; and these matters must be deposited in the receptacles immediately after slaughtering and removed, with all fat, hides, skins, tripe, and bones, daily between the hours of 6 p. m. and 8 a. m. No blood or offal shall be permitted to flow into the sewer. Any person or persons or corporations offending against or violating any of the provisions of this section shall, on conviction thereof, forfeit and pay a penalty of $50.

SEC. 35. That the owners, agents, tenants, lessees, or occupants of all slaughterhouses shall thoroughly and effectually wash the walls, floors, and yards thereof at least once in every 24 hours, and during the months of May, June, July, August, and September shall distribute twice each week not less than 25 pounds of chloride of lime about their premises, and also remove the contents of any manure pit or manure pile on the premises once in each week during said months; if the above requirements should not be complied with, the board of health is hereby directed to carry out the provision of this section as to disinfecting and the removal of the contents of said manure pits or piles, at the expense of said owner, agent, tenant, lessee, or occupant. Any person or persons or corporations failing to comply with or offending against any of the provisions of this section shall, on conviction thereof, forfeit and pay a penalty of $25.

SEC. 36. That no blood pit, dung pit, or privy well shall remain or be constructed within any slaughterhouse. Any person or persons or corporation offending against or violating any of the provisions of this section shall on conviction thereof forfeit and pay a penalty of $25.

SEC. 37. If it shall at any time appear to the board of health that exceptions to any of the provisions of sections 33, 34, 35, and 36 of this code should be made, a permit in writing to that effect may be granted, subject to revocation at the pleasure of the board.

[Part of ordinance adopted Dec. 11, 1911.]

YONKERS, N. Y.

POLLUTION OF STREAMS.

SEC. 114. No person shall throw, deposit, discharge, or convey, or cause to be thrown, deposited, discharged, or conveyed, into the Nepperhan River, in the city of Yonkers, or into any pond or stream in said city, any garbage, refuse, excrement, animals, either dead or living, or any vegetable or animal matter liable to decay and emit offensive or unwholesome gases or effluvia, or anything which is or is likely to become a nuisance, dangerous or detrimental to public health.

SEC. 115. There shall be no sewage or any unclean discharge whatsoever which is or may become injurious to health from any dwelling house, privy, vault, cesspool, slaughterhouse, factory, store, stable, or other building into the Nepperhan River or any pond or stream in the city of Yonkers.

SEC. 116. No owner, lessee, tenant, or occupant of any premises in the city of Yonkers, adjacent to or in the vicinity of the Nepperhan River or any pond or stream, shall construct, use, maintain, discharge therefrom into or upon the premises so owned or occupied by him, any privy, water closet, or cesspool, situated so that excrement, slops, garbage, or any vegetable or animal matter which is or is likely to become a nuisance or offensive, can pass or be discharged therefrom into or upon either the waters of the Nepperhan River or any pond or stream in the city of Yonkers, or upon the surface of the land adjacent to or in the vicinity of said Nepperhan River or stream.

[Part of ordinance adopted Dec. 26, 1911.]

REPORTS TO THE SURGEON GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PLAGUE-PREVENTION WORK.

PLAGUE-INFECTED SQUIRRELS FOUND.

During the week ended May 18, 1912, positive diagnosis of plague was made in 23 ground squirrels collected in Alameda and Contra Costa Counties, Cal. The squirrels were found as follows: In Alameda County, May 7, 1 squirrel; May 8, 1 squirrel; May 9, 3 squirrels; in Contra Costa County, May 7, 3 squirrels; May 8, 11 squirrels; May 10, 1 squirrel; May 11, 2 squirrels; May 13, 1 squirrel.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 7,293 acres of land in Alameda County were covered with poison during the week ended May 18, 1912.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	May 9, 1912	211 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	May 13, 1912	382 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 28, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
Cities—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected
California:					
Cities—					
Berkeley	May 18, 1912		[1] 179	128	
Oakland	do	34	[2] 771	596	
San Francisco	do	8	[3] 1,655	1,326	
Washington:					
City—					
Seattle	do		923	871	

[1] Identified: Mus norvegicus, 128; Mus musculus, 51.
[2] Identified: Mus norvegicus, 626; Mus rattus, 2; Mus musculus, 141; Mus alexandrinus, 2.
[3] Identified: Mus norvegicus, 908; Mus rattus, 200; Mus musculus, 329; Mus alexandrinus, 218.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended May 18, 1912, 321 ground squirrels collected in Alameda County and 2,398 collected in Contra Costa County, Cal., were examined for plague infection. Five from Alameda County and 18 from Contra Costa County were found to be plague infected.

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED JUNE 8, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Boston, Mass	27	2	New York, N. Y	13	3
Chicago, Ill	2	1	Oklahoma, Okla	1	1
Houston, Tex	1		Omaha, Nebr	1	
Kansas City, Mo	2	3	Philadelphia, Pa	1	1
Los Angeles, Cal		1	Providence, R. I	1	
New Bedford, Mass	1		St. Louis, Mo	2	
New Orleans, La	1	1			

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED JUNE 8, 1912.

Cities.	Cases.	Deaths.	Cities.	Cases.	Deaths.
Ann Arbor, Mich	2		New York, N. Y	21	11
Baltimore, Md		1	Omaha, Nebr	2	
Boston, Mass		2	Philadelphia, Pa	7	1
Bridgeport, Conn	1		Pittsburgh, Pa	4	
Cincinnati, Ohio	2		Plainfield, N. J	2	
Cleveland, Ohio	9	1	Providence, R. I		1
Everett, Mass		1	Rutland, Vt	1	
Hartford, Conn	1		St. Louis, Mo	7	
Kalamazoo, Mich	1		Taunton, Mass		1
Los Angeles, Cal	2		Wheeling, W. Va	1	
Milwaukee, Wis	2		Williamsport, Pa	1	
Newcastle, Pa	1		Zanesville, Ohio		1

PELLAGRA.

During the week ended June 8, 1912, 3 deaths from pellagra were reported at Houston, Tex., and 1 at Montgomery, Ala.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED JUNE 8, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Ann Arbor, Mich	1	....	Mount Vernon, N. Y	3	....
Auburn, N. Y	3	2	Newark, N. J	....	6
Baltimore, Md	....	12	New Bedford, Mass	....	1
Beaver Falls, Pa	1	....	New Orleans, La	....	5
Binghamton, N. Y	1	1	New York, N. Y	....	84
Boston, Mass	....	16	Norristown, Pa	....	1
Braddock, Pa	2	....	Oakland, Cal	....	5
Bridgeport, Conn	....	3	Omaha, Nebr	....	1
Brockton, Mass	....	1	Pasadena, Cal	....	2
Cambridge, Mass	....	1	Passaic, N. J	....	4
Chicago, Ill	20	74	Pawtucket, R. I	....	2
Chicopee, Mass	....	1	Philadelphia, Pa	16	33
Cincinnati, Ohio	....	5	Pittsburgh, Pa	20	25
Cleveland, Ohio	17	6	Providence, R. I	....	1
Dayton, Ohio	....	5	Reading, Pa	....	3
Elizabeth, N. J	....	2	Richmond, Va	....	1
Elmira, N. Y	1	2	Roanoke, Va	....	1
Evansville, Ind	....	1	Rockford, Ill	....	1
Fall River, Mass	....	6	Rutland, Vt	1	....
Galesburg, Ill	....	3	Salem, Mass	....	2
Grand Rapids, Mich	....	1	Schenectady, N. Y	5	4
Hartford, Conn	....	4	South Bethlehem, Pa	1	1
Houston, Tex	....	2	South Omaha, Nebr	....	1
Kalamazoo, Mich	3	....	Springfield, Mass	....	2
Kansas City, Mo	1	1	Superior, Wis	....	1
La Fayette, Ind	....	1	Taunton, Mass	....	2
Lawrence, Mass	....	1	Toledo, Ohio	....	1
Lexington, Ky	....	2	Washington, D. C	....	2
Logansport, Ind	....	1	Wilkes-Barre, Pa	....	4
Los Angeles, Cal	....	4	Wilkinsburg, Pa	....	1
Lowell, Mass	....	2	Williamsport, Pa	1	2
Malden, Mass	....	2	Yonkers, N.Y	....	2
Manchester, N. H	1	1	Zanesville, Ohio	....	1

POLIOMYELITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED JUNE 8, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Cincinnati, Ohio	1	....	Philadelphia, Pa	1	1
Lowell, Mass	1	....	New York, N. Y	11	1
New Orleans, La	1	....			

TETANUS.

During the week ended June 8, 1912, tetanus was reported as follows: Baltimore, Md., 1 death; Houston, Tex., 1 death; Philadelphia, Pa., 2 cases and 1 death.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health and include all cases reported to the State authorities.

REPORTS RECEIVED DURING WEEK ENDED JUNE 28, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
Indiana:				
Counties—				
Clark	Apr. 1-30	4		In addition to those noted on p. 873.
Bartholomew	May 1-31	7		
Clark	do	13		
Dearborn	do	1		
Delaware	do	3		
Gibson	do	5		
Green	do	1		
Howard	do	1		
Johnson	do	15		
Laporte	do	1		
Madison	do	1		
Marion	do	6		
Miami	do	1		
Morgan	do	1		
Pike	do	9		
Randolph	do	1		
St. Joseph	do	1		
Sullivan	do	2		
Vanderburg	do	1		
Wabash	do	2		
Total for State		72		
Kansas:				
Counties—				
Allen	Mar. 1-31	2		
Cherokee	do	2		
Crawford	do	5		
Labette	do	1		
Lyon	do	47		
McPherson	do	1		
Mitchell	do	1		
Montgomery	do	1		
Republic	do	1		
Sedgwick	do	36		
Sumner	do	1		
Wichita	do	1		
Wyandotte	do	5		
Total for State		104		
Brown	Apr. 1-30	1		
Clay	do	5		
Leavenworth	do	1		
Lyon	do	15		
Total for State		22		
*Kentucky:				
Louisville	Jan. 1-31	4		
Do	Feb. 1-29	3		
Do	Mar. 1-31	11		
Do	Apr. 1-30	7		
Do	May 1-31	8		
*Louisiana:				
New Orleans	June 9-15	4		
Oregon	Jan. 1-31	67		In addition to those noted on p. 471.
*South Carolina:				
Charleston	Apr. 1-30	3		
*Tennessee:				
Knoxville	June 9-15	5		
Wyoming:				
Counties—				
Uinta	Feb. 1-29	18	3	In addition to those noted on p. 403.
Carbon	Mar. 1-31	1		
Sweetwater	do	14		
Total for State		15		
Grand total for the United States.		347	3	

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLES, CITIES OF THE UNITED STATES, FOR WEEK ENDED JUNE 8, 1912.

Cities.	Population United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Small-pox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md	558,485	179	8	1	31		5				60	27	10	2
Boston, Mass	670,585	208	27	2	194	1	14				68	21	17	
Chicago, Ill	2,185,283	618	122	18	333	4	204	17	2	1	107	79	19	5
Cleveland, Ohio	560,663	140	30	1	99	3	40	1			27	15	1	
New York, N. Y	4,766,883	1,338	241	15	1,233	21	261	15			549	182	48	9
Philadelphia, Pa	1,549,008	432	50	8	36	1	63	3			92	50	27	1
Pittsburgh, Pa	533,905	132	17	4	185	6	31	3			44	13	4	
St. Louis, Mo	687,029	175	11	2	16		14				41	18	3	1
Cities having from 300,000 to 500,000 inhabitants.														
Cincinnati, Ohio	364,463	108	2	1	12		21				31	17	1	1
Detroit, Mich	465,766	157	23	3			16	3	4					
Los Angeles, Cal	319,198	76	7		15		9		2		31	12		
Milwaukee, Wis	373,857	99	12	2	111	2	24	1	1		16	6	9	1
Newark, N. J	347,469	95	17		23		13				41	10	3	1
New Orleans, La	339,075		5		33		10		4		34	12	5	1
Washington, D. C	331,069	96	3		146	1	2				36	14	9	1
Cities having from 200,000 to 300,000 inhabitants.														
Jersey City, N. J	267,779	63		1								6		
Kansas City, Mo	248,381		4		6						4	12		
Providence, R. I	224,326	48	5		6	1	9				6	7		
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	25	4		2	1	7	4			6			
Cambridge, Mass	104,839	23	3		57						4	2		
Columbus, Ohio	181,548	43	4		32		5				3	6	1	
Dayton, Ohio	116,577	35	2		40		1		1			3	1	
Fall River, Mass	119,295	37	1		1	1	1				6	6	3	
Grand Rapids, Mich	112,571	35			5		1				1	4	4	2
Lowell, Mass	106,294	38	3	1	56	6	2				4	4	3	
Nashville, Tenn	110,364	47					1		2		5	2	1	
Oakland, Cal	150,174	39			8		1				1	6	1	
Omaha, Nebr	124,096	20	2				1		1			2	1	1
Richmond, Va	127,628	39			4				1		5	3	2	1
Spokane, Wash	104,402	40	2		20		2		7				4	
Toledo, Ohio	168,497	54	4	1	110	1	2					4	5	
Worcester, Mass	145,986	45	5	1	25	1					6	7		
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	8	1									1		
Bayonne, N. J	55,545	13	1		14		4				4	2		
Brockton, Mass	56,878	15			14	1					6	1		1
Camden, N. J	94,538						5				7			
Duluth, Minn	78,466	18					7				1	1		
Elizabeth, N. J	73,409	26	1		4		4	1			4	2		
Evansville, Ind	69,647	21	2		3		1				1	3	2	
Fort Wayne, Ind	63,933	16	1		4							1	1	
Harrisburg, Pa	64,186	17	2		3				3		5	2		
Hartford, Conn	98,915	37	11	3	36	2	7	2			9		1	
Hoboken, N. J	70,324	21	2		4		2				11			
Houston, Tex	78,800	25							2			1		
Johnstown, Pa	55,482	14	1		7							1		
Kansas City, Kans	82,331		3											
Lawrence, Mass	85,892	28			7		1					3	2	
Lynn, Mass	89,336	16	3		7						8	3	1	
Manchester, N. H	70,063	11	3		15						1	1		
New Bedford, Mass	96,652	21	4		6		2				5	3	3	
Oklahoma City, Okla	64,205	11			5							1	1	1
Passaic, N. J	54,773	21	2		56						5			1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality tables, cities of the United States, for week ended June 8, 1912—Continued.

Cities.	Population United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Reading, Pa	96,071	28	5		32						1	2	8	2
Saginaw, Mich	50,510	10	2		6		2					2		
Schenectady, N. Y	72,826	18	1	1	59	2	1							
South Bend, Ind	53,684	4	1		1							3		
Springfield, Ill	51,678	15										1		
Springfield, Mass	88,926	18	3	1	3		1				1	1	1	
Trenton, N. J	96,815	38	2		1		1				11	9	3	
Wilkes-Barre, Pa	67,105	19	2		1						1	2		
Wilmington, Del	87,411	26										5		
Yonkers, N. Y	79,803	22	3		5		4				6	4	1	
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	14												
Auburn, N. Y	34,668	11			3						4			
Aurora, Ill	29,807	8	1									1		
Berkeley, Cal	40,434				4		1				1	1	1	
Binghamton, N. Y	48,443	15	1										1	
Brookline, Mass	27,792	5			7									
Chattanooga, Tenn	44,604						4		1				1	
Chelsea, Mass	32,452	6	1		18		1				6	1		
Chicopee, Mass	25,401	9			15		1					1		
Danville, Ill	27,871	6			1							1		
East Orange, N. J	34,371		2		48		2							
Elmira, N. Y	37,176	12			52	1					1			
Everett, Mass	33,484	10	1		8								1	
Fitchburg, Mass	37,826	5												
Haverhill, Mass	44,115	10	1		35		1				3		1	
Kalamazoo, Mich	39,437	11					1				4			
Knoxville, Tenn	36,346	11							5			1		
La Crosse, Wis	30,417	6	2									1		
Lancaster, Pa	47,227				14		3				1			
Lexington, Ky	35,099	16			2						3	3	2	1
Lynchburg, Va	29,494	14			8		3				1	2		
Malden, Mass	44,404	9			20		2						1	
Montgomery, Ala	38,136	18			1							2	3	
Mount Vernon, N. Y	30,919		1		5		1				2			
Newcastle, Pa	36,280		1				1				7			
Newport, Ky	30,309	3					1							
Newton, Mass	39,806	7	2		51						2			
Niagara Falls, N. Y	30,445	7	1		4				3		1			
Norristown, Pa	27,875	8									4		1	
Orange, N. J	29,630		1	1	8							1		
Pasadena, Cal	30,291	9			1							2		
Pittsfield, Mass	32,121	16	1	2								2		1
Portsmouth, Va	33,190	11							2			3		
Racine, Wis	38,002	11	5				2							
Roanoke, Va	34,874	12			6		1				3	2	1	
Rockford, Ill	45,401	15	1				4						37	
Salem, Mass	43,697	10			9				2			2		
San Diego, Cal	39,578				2				2		4	4		
South Omaha, Nebr	26,259	10												
Superior, Wis	40,384						2					1		
Taunton, Mass	34,259	14	1		1							2		
Waltham, Mass	27,834	7	1		11						2			
West Hoboken, N. J	35,403		2		9						1			
Wheeling, W. Va	41,641	7	7	1	6						2	1	2	
Williamsport, Pa	31,860	7	1		48									
Wilmington, N. C	25,748	11									2	1	9	
York, Pa	44,750		1		29									
Zanesville, Ohio	28,026	10	1	1								1	2	

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality tables, cities of the United States, for week ended June 8, 1912—Continued.

Cities.	Population United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Alameda, Cal	23,833	5			17						1	1		
Ann Arbor, Mich	14,817	15	1											
Beaver Falls, Pa	12,191		1				1							
Biddeford, Me	17,079	5										1		
Braddock, Pa	17,759	4												
Cambridge, Ohio	11,327	2												
Camden, S. C		1												
Carbondale, Pa	17,040	7			4									
Clinton, Mass	13,075	6			2		1					1		
Coffeyville, Kans	12,687												1	
Columbus, Ga	20,554	5												
Columbus, Ind		3			1		3							
Concord, N. H	21,497	11			21								1	
Cumberland, Md	21,839	2			18						2	1		
Dunkirk, N. Y		3									1			
Galesburg, Ill	20,089	7	1											
Harrison, N. J	14,498	3	3								1			
Homestead, Pa	18,710		3											
Kearny, N. J	18,659	9	2								3			
La Fayette, Ind	20,081	5										1		
Logansport, Ind	19,050	5		1	1							1		
Marlboro, Mass	14,579	2												
Massillon, Ohio	13,879	3	1					1						
Medford, Mass	23,156	4	1		39		1					1		
Melrose, Mass	15,715	7			15							1	2	
Moline, Ill	24,199	3	2										3	
Morristown, N. J	12,507	9			6									
Nanticoke, Pa	18,509	2												
Newburyport, Mass	19,240	7											1	
North Adams, Mass	22,019	8												
Northampton, Mass	19,431				6									
Ottumwa, Iowa	22,012	6										1		
Palmer, Mass		3												
Plainfield, N. J	22,050	3	1		1									
Rutland, Vt	13,546	3	1											
Saratoga Springs, N. Y		4			1									
South Bethlehem, Pa	19,973	7			1							1		
Steelton, Pa	14,246				7									
Warren, Pa	11,080	3			1		2							
Wilkinsburg, Pa	18,294	3			4		4				3			
Woburn, Mass	15,308	5			1		1				1			

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

CONNECTICUT.—Month of May, 1912. Population of reporting towns 1,127,518. Total number of deaths from all causes 1,386, including diphtheria 15, measles 14, scarlet fever 7, tuberculosis 142, typhoid fever 13. Cases reported: Diphtheria, 117 in 34 towns; measles, 1,104 in 68 towns; scarlet fever, 167 in 41 towns; smallpox, 72 in 8 towns; tuberculosis, 186 in 46 towns; typhoid fever, 68 in 27 towns.

MISSOURI.—Six months ended December 31, 1911. Population 3,293,335. Total number of deaths from all causes 20,373, including diphtheria 390, measles 32, scarlet fever 65, smallpox 5, tuberculosis 2,250, typhoid fever 771.

Three months ended March 31, 1912. Total number of deaths from all causes 12,354, including diphtheria 178, measles 23, scarlet fever 62, smallpox 1, tuberculosis 1,372, typhoid fever 128.

NEW YORK.—Month of April, 1912. Population 9,592,258. Total number of deaths from all causes 12,775, including diphtheria 155, measles 187, scarlet fever 135, tuberculosis 1,589, typhoid fever 68. Cases reported: Diphtheria 1,652, measles 11,137, scarlet fever 2,762, smallpox 32, pulmonary tuberculosis 2,514, typhoid fever 433.

WISCONSIN.—Months of January, February, and March, 1912. Population 2,333,815. Total number of deaths from all causes 7,608, including diphtheria 89, measles 18, scarlet fever 120, smallpox 1, tuberculosis 669, typhoid fever 108. Cases reported: Diphtheria 525, measles 868, scarlet fever 1,465, smallpox 236, tuberculosis 326, typhoid fever 445.

FOREIGN AND INSULAR.

CHINA.

Amoy—Plague.

Consul Brissel reports May 20 the presence of plague in Amoy and vicinity.

Hongkong—Plague—Smallpox—Plague-Infected Rats.

Surg. Brown reports: During the week ended May 11, 1912, 138 cases of plague, with 118 deaths, and 6 cases of smallpox, with 4 deaths, were reported at Hongkong.

During the same period 2,746 rats were examined at Hongkong, of which number 35 were found to be plague-infected.

Swatow—Plague in Consular District.

According to information received from Consul Williams, dated May 18, plague was reported prevalent at four localities in the consular district of Swatow, one of the localities being the nearest railroad station to Swatow.

CUBA.

Transmissible Diseases.

The following statement was issued by the Cuban sanitary department:

Month of May, 1912.

Disease.	New cases.	Deaths.	Remaining under treatment.
Tuberculosis	137	197	1,348
Leprosy		2	344
Malaria	104	15	147
Typhoid fever	85	24	72
Diphtheria	46	8	7
Scarlet fever	43		3
Measles	108	3	54
Varicella	9		12
Tetanus in new born	16	16	
Dengue	4		12
Filariasis			2

EGYPT.

Typhus Fever.

Consul Knabenshue, at Cairo, reports the occurrence of 6 cases of typhus fever with 6 deaths at Cairo, and 2 cases with 1 death at Port Said, during the two weeks ended May 13, 1912.

HAWAII.

Examination of Rodents for Plague Infection.

During the month of May, 1912, 3,456 rats and mongoose were examined at Hilo and 6,265 at Honokaa. During the week ended June 1, 1912, 554 rats and mongoose were examined at Hilo and 1,292 rats and mongoose at Honokaa. No plague infection was found.

At Honolulu during the week ended May 25, 1912, 318 rats were examined, and during the week ended June 1, 197 rats. No plague-infected rat was found.

The last case of human plague occurred at Honokaa March 18, 1912. A plague-infected rat was found between Honokaa and Kapulena April 24, 1912.

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports cholera and plague as follows:

During the week ended April 27, 1912, 87 deaths from cholera and 119 from plague were reported at Calcutta; in all Bengal 1,830 cases of plague with 1,607 deaths; in all India 8,810 cases of plague with 7,783 deaths.

During the week ended May 4, 1912, 84 deaths from cholera and 94 from plague were reported at Calcutta; in all Bengal 1,204 cases of plague with 1,004 deaths; in all India 6,318 cases of plague with 5,413 deaths.

ITALY.

Examination of Emigrants.

Surg. Geddings, at Naples, reports:

Vessels inspected at Naples, Messina, and Palermo, week ended June 1, 1912.

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 29	San Guglielmo	New York	603	70	830
29	Pannonia	do			
30	Perugia	do	141	30	280
31	Konig Albert	do	1,077	150	1,470
June 1	Taormina	do	727	80	950
	Total		2,548	330	3,520

MESSINA.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 27	San Guglielmo	New York	253	58	289
27	Pannonia	do			
	Total		253	58	289

PALERMO.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 28	San Guglielmo	New York	286	380	300
28	Pannonia	do			
28	Kaiser Franz Joseph	do			
31	Perugia	do	150	150	90
June 1	Konig Albert	do	164	200	190
	Total		600	730	480

JAVA.

Batavia—Typhus Fever.

Consul Rairden reports the occurrence of one case of typhus fever, with one death, during the week ended April 20, and three cases, with one death, for the two weeks ended May 11.

MEXICO.

Typhus Fever.

At Aguascalientes Consul Schmutz reports the occurrence of two cases of typhus fever, with four deaths, during the two weeks ended June 9.

At Mexico City Consul General Shanklin reports 111 cases of typhus fever, with 24 deaths, during the two weeks ended May 11.

Yellow Fever at San Juan Bautista.

The American consul at Frontera reports four new cases of yellow fever at San Juan Bautista June 22.

PORTO RICO.

San Juan—Plague Situation.

Passed Asst. Surg. Grubbs reports June 25: Rat examinations indicate that a mile of the water front is infected. Measures are being taken to limit the infection to the island of the old city. The worst houses in the infected area are being destroyed after being first surrounded by a wire fence. Systematic catching and laboratory examination of rats and daily house inspection are being carried on. Observation and detention camps have been provided. Three deaths have occurred in the suburbs. Am urging catching and examination of rats there.

RUSSIA.

Plague.

From April 21 to May 5, 1912, seven cases of plague, with six deaths, were reported in the village of Karasoy, Ural Province.

SOUTH AFRICA.

Durban, Natal—Plague.

A death from plague occurred at Durban May 25, 1912. The last case previously reported occurred April 15.

VENEZUELA.

Caracas—Yellow Fever.

Two cases of yellow fever were reported at Caracas during the two weeks ended May 31, 1912.

ZANZIBAR.

Zanzibar—Examination of Rats.

Consul Weddell reports the examination of 1,072 rats at Zanzibar during the week ended May 7, 1912. No plague-infected rat was found.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED JUNE 28, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State, and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Apr. 29-May 4	12	12	
Bombay	May 12-18	73	61	June 19, still present.
Calcutta	Apr. 29-May 4		84	
Moulmine	do	6	6	
Indo-China:				
Saigon	Apr. 30-May 13	83	63	
Turkey in Asia and Europe				Total Feb. 29-May 18: Cases 249, deaths 96.
Adana	Apr. 17-29	53	23	Employees in railway construction.
Do	Apr. 30-May 13	72	25	
Biredjik	Jan. 6-Feb. 5	17	18	
Bilan	May 6	2	2	
Dijan	Feb. 5-May 13	11	5	
Janina	Feb. 5-Mar. 13	3		
Jeanne d'Arc	Jan. 1-6	7	6	
Loros	Feb. 5-Mar. 13	16	7	
Tarsus	Feb. 5-Apr. 15	7	5	

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Manaos	May 26-June 1		5	
Chile:				
Tocopilla	May 25			Still present.
Mexico:				
San Juan Bautista	June 22	4		

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Chile				[1] Year 1911: Cases, 262; deaths, 86.
Iquique	May 5-11	1		
China				May 18, present in the majestries of Fungshun, Kayung, and Puning.
Amoy	May 20			Present.
Ampo	May 18			Do.
Hongkong	May 5-11	138	118	
Dutch East Indies				Total, Mar. 3-30, cases 35, deaths 34.
Provinces—				
Kediri	Mar. 3-30	2	1	
Madiven	do	14	15	
Surabaya	Mar. 13	1	1	
Egypt:				
Alexandria	May 11-14	4	3	
Port Said	May 23-28	3		
Provinces—				
Assiout	May 15-24	7	2	
Beni Souef	May 15-29	12	4	
Fayoum	May 17-27	26	17	
Garbieh	Apr. 25	1		
Girgeh	May 14-25	4	2	
Menouf	Apr. 24-May 26	13	1	
Minieh	May 16-26	46	11	

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[1] From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, June 5, 1912.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during week ended June 28, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	May 12-18	88	80	
Calcutta	Apr. 28-May 4		94	
Karachi	May 12-18	70	65	
Indo-China:				
Saigon	Apr. 30-May 13	21	10	
Java:				
Pasoeroean Residency	May 5-11	10	9	
Persia:				
Bushir	Apr. 14-May 11	513	394	
Russian Empire:				
Ural territory	Apr. 21-May 5	7	6	
South Africa:				
Durban	May 25	1	1	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Para	May 19-25		1	
British East Africa:				
Mombasa	Apr. 1-30		1	
Canada:				
Fernie	June 11-17	1		
Hamilton	June 9-15	1		
Quebec	do	5		
Toronto	May 26-June 8	2		
Windsor	June 9-15	2		
Chile:				
Coquimbo	May 19-25	7	6	
China:				
Hongkong	May 5-11	6	4	
Seoul	May 1-25	12		
France:				
Paris	May 19-June 1	9	1	
Germany				Total May 26-June 1: Cases, 24.
Chemnitz	May 19-25		1	
Great Britain:				
Bristol	May 26-June 1	1		
India:				
Bombay	May 12-18	55	36	**May 5-11:** Cases 18, deaths 8.
Calcutta	Apr. 28-May 4		3	
Karachi	May 12-18	1	1	
Indo-China:				
Saigon	Apr. 30-May 13	4	2	
Italy:				
Leghorn	June 2-8	4		
Naples	May 19-June 1	7	1	
Palermo	do	7		
Java:				
Batavia	May 5-11	3	1	
Mexico:				
Aguascalientes	June 3-9		1	
Juarez	June 2-15	4		
Mazatlan	June 5-11		2	
Mexico	Apr. 28-May 18	84	40	
Portugal:				
Lisbon	May 26-June 1	3		
Russia:				
Moscow	May 5-18	12		
St. Petersburg	May 12-25	27	12	
Warsaw	Apr. 14-20	8	2	
Spain:				
Malaga	Mar. 1-31		5	
Straits Settlements:				
Singapore	Apr. 28-May 4	1	1	
Turkey in Asia:				
Beirut	May 19-25	12		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 28, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14-24	2	2	
Croatia and Slavonia				Total Oct. 22-Dec. 16: Cases, 36.
Sriem	Oct. 22-Dec. 16	36		
Hungary				Total Nov. 19-Dec. 23: Cases, 37. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.
Bulgaria:				
Burgas	Nov. 22-23	2	2	Aug. 30-Sept. 6; 2 fatal cases from s. s. Episticia from Asia Minor, p. 1635, Vol. XXVI.
Varna	Nov. 6	1		
China:				
Amoy	June 3			Present.
Hongkong	Jan. 14-20	1	1	July 2-15, 1911: Cases, 5; deaths, 4, p. 1300, Vol. XXVI.
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, Vol. I.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
Celebes	Mar. 10	5	2	
Sumatra—				
Siantar	Apr. 1-27			Present.
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-May 4	169	91	
Bombay	Apr. 7-May 18	122	101	June 19, still present.
Calcutta	Nov. 5-May 4		1,440	
Madras	Nov. 26-May 11	561	453	Madras Presidency Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-Apr 30: Cases, 22,878; deaths, 14,430.
Moulmine	Feb. 18-May 4	47	44	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Mar. 31	143	124	
Indo-China:				
Saigon	Nov. 20-May 13	1,904	1,342	And vicinity.
Italy				Total June 8-Dec. 31: Cases, 15,985: deaths, 6,022.
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
Messina	Nov. 26-Dec. 2	3	2	
Syracuse	Nov. 26-Dec. 23	15	9	
Malta	Nov. 19-Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4-11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Kermanshah	Dec. 18-26		37	
Philippine Islands				Third quarter, 1911: Manila, 1, fatal case; Provinces, 27 cases and 22 deaths. Fourth quarter, 1911: Manila, no case and no death: Provinces, 22 cases, 20 deaths.
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 28, 1912—Continued.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Servia				Total year 1911: Cases, 95; deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Apr. 20		1,775	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No case since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	
Turkey in Asia				Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6-May 18: Cases, 350; deaths, 222.
Do	Mar. 18-May 7	53	31	Along the line of the Damascus railway construction.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2-May 13	206	83	Among employees in railway construction.
Aleppo	Jan. 26-May 18	48	30	May 18, 2 cases; 1 death.
Amara	Oct. 15	1	1	
Antioch	Mar. 25-Apr. 16	11	6	
Basra	Oct. 22-28	14	10	
Bilan	Apr. 7-May 2	2	2	
Biredjik	Jan 6-Feb. 5	17	18	
Dijan	Feb. 5-May 13	11	5	
Jeanne d'Arc	Jan. 1-6	7	6	
Erzeroum, vilayet	Sept. 11-16	50	28	
Ezeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20-28	10	10	
Kharput	Nov. 19-Dec. 30	47	47	
Jiddah	Dec. 2-24	323	310	
Mekka	Dec. 4-24	905	879	Sept. 1-Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1-7	2	1	
Osmania	Dec. 1-6	2	4	
Sinope	Dec. 7	2	1	
Tarsus	Feb. 5-Apr. 15	7	5	
Tor	Dec. 14-26	29		
Trebizond and vicinity	Sept. 18-23	64	34	
Tripoli	Jan. 4			Do.
Turkey in Europe:				
Constantinople	Oct. 24-Feb. 3	8	2	
Durazzo	Dec. 7-13	2		
Janina	Jan. 14-Mar. 13	20	8	
Loros	Jan. 22-Mar. 13	28	14	
Saloniki, vilayet	Nov. 6-19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Bahia	Mar. 23-25		1	
Ceara	Jan. 1-Feb. 29		5	
Manaos	Nov. 19-June 1		77	
Para	Mar. 3-9	2	2	Dec. 9-16: 1 fatal case.
Pernambuco	Jan. 1-Apr. 15		29	Apr. 2: Epidemic.
Rio de Janeiro	Mar. 17-Apr. 30	4	3	
Canal Zone:				
Culebra Island quarantine				In January 1 case from a vessel from Guayaquil. Mar. 2-4, 1 fatal case from s. s. Chile from Guayaquil.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 28, 1912—Continued.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Chile				May 7: Present in Iberia, Peregrina, Prosperidad, Santa Ana, and Santa Fe.
Tocopilla	Jan. 28-Apr. 30	570	179	Including previous report. Case Jan. 28 from s. s. Condor from Guayaquil. May 25, still present.
Ecuador:				
Bucay	Nov. 16-Feb. 29	7	2	
Duran	Dec. 1-Apr. 15	14	6	
Guayaquil	Nov. 16-Apr. 30	173	77	
Huigra	Feb. 1-29	1		
Milagro	Feb. 1-Apr. 30	19	10	
Naranjal	Mar. 16-31	1		
Naranjito	Feb. 1-Apr. 30	9	6	
Yaguachi	Feb. 1-Apr. 30	3		
Great Britain:				
Liverpool	May 14-18	1		Convalescent on s. s. Gladiator from Cabdello, detained at Port Sanitary Hospital.
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Kambul, hacienda	Feb. 21-27		7	
Maxcanu	Dec. 31-Jan. 6	1		
Merida				Total Aug. 1, 1911-May 25, 1912: Cases, 67; deaths, 31.
Puerto Mexico (Coatzacoalcos).	Feb. 28-May 25		2	
Salina Cruz	Feb. 4-7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
San Juan Bautista	May 4-June 22	12	1	
Temax	Dec. 31-Jan. 6	1		
Portuguese Guinea:				
Bolama	Dec. 19-25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16-May 15	32		Dec. 1-30, 1911, 10 deaths, and Jan. 15-Mar. 31, 12 deaths, including previous reports. May 4-10, 1 death.
El Valle	Apr. 1-May 31			Present.
Guarenas	do			Do.
La Guaira	Mar. 17-Apr. 1	2	2	
Macuto	Mar. 16-May 30	2	2	Do.
Maiquetia	Feb. 24-Apr. 30	4	4	A suburb of La Guaira.
Sabana Grande	Dec. 12			Epidemic.
West Indies:				
Barbados—Bridgetown	Apr. 27	1	1	From steamship Francis from Para.
St. Vincent	Feb. 19	1		
At sea	Dec. 17-23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Philippeville	Oct. 19-Nov. 11	8	2	Including 5 cases, p. 2096, Vol. XXVI.
Arabia:				
Aden	Mar. 5-25	2	1	
Azores:				
Fayal	Jan. 10			Still present.
Teceira	do			Do.
Brazil:				
Bahia	Sept. 1-30		2	
Para	Dec. 24-Apr. 20	24	15	
Pernambuco	Oct. 1-Feb. 29		9	
Rio de Janeiro	Nov. 12-Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15-25	2		1 case pneumonia.
Chile				Year, 1911: Cases, 262; deaths, 85.
Iquique	Nov. 12-May 11	30	13	
Pisagua	Nov. 1-30	8		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 28, 1912—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China				May 18 present in the magistracies of Fungshun, Kayung, and Puning.
Amoy	Jan. 13		1	May 20, present.
Ampo	May 18			Present.
Chaochowfu	Mar. 10-Apr. 13			Do.
Hongkong	Dec. 9-May 11	655	565	
Dutch East Indies:				
Java				Total Mar. 1-Dec. 30: Cases, 1,817; deaths, 1 324. Dec. 31-Mar 30: Cases, 134; deaths, 129.
Provinces—				
Kediri	Jan. 1-Mar. 30	28	26	
Madiven	Mar. 3-30	67	64	
Pasoeroean Residency, Malang District.	Nov. 12-May 11	172	122	
Surabaya	Mar. 13	1	1	Oct. 17-27, 2 cases.
Ecuador:				
Duran	Feb. 1-29	1		
Guayaquil	Nov. 16-Feb. 29	124	52	Dec. 16-Jan. 31: Reports not available because of revolution.
Egypt				Total Jan. 1-Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported. Jan. 1-May 27: Cases, 584, deaths, 294.
Alexandria	Mar. 22-May 26	7	5	
Cairo	Apr. 22-May 14	4	3	
Port Said	May 23-28	3		
Provinces—				
Assiout	Jan. 1-May 24	91	56	Sept. 11-16: Cases, 50; deaths, 28.
Assouan	Jan. 1-May 14	42	31	
Behera	Jan. 1-Apr. 15	5	3	Sept. 11-16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16-May 29	52	16	
Carchieh	Apr. 21-27	8	7	
Fayoum	Jan. 1-May 27	52	27	
Galionbeh	Jan. 1-Apr. 23	5	3	Oct. 5-Dec. 26: Case, 1.
Garbieh	Jan. 1-Apr. 25	25	8	
Girgeh	Mar. 28-May 25	9	5	
Kena	Jan. 1-May 29	131	98	Nov. 20-Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2-Apr. 26	22	3	
Minieh	Jan. 1-May 26	128	28	Dec. 13: Case, 1.
German East Africa	Mar. 15-Apr. 10			65 cases of pneumonic and 3 cases of bubonic in Gasseni and Usseri Demassi.
Dar-es-Salaam	Nov. 13-15	1	1	From the interior via Bergamogo.
Great Britain:				
Liverpool	Apr. 27-30	1	1	In the Royal Southern Hospital, from s. s. Italian Prince, which arrived at Liverpool Apr. 19, laden with fruit and grain from Mediterranean ports.
Hawaii:				
Honakaa	Feb. 9-Mar. 18	4	4	
India:				
Bombay	Nov. 19-May 18	1,375	1,153	
Calcutta	Nov. 11-May 4		1,007	
Karachi	Nov. 26-May 18	1,216	1,052	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1-6	1	1	
Rangoon	Oct. 1-Mar. 31	231	221	
Bombay Presidency and Sind.	Oct. 29-Apr. 20	60,836	44,849	
Madras Presidency	do	10,450	8,094	
Bengal	do	41,919	35,690	
Babar and Orissa	Apr. 1-20	6,758	5,984	
United Provinces	Oct. 29-Apr. 20	108,195	97,121	
Punjab	do	21,693	16,416	
Burma	do	1,637	1,499	
Eastern Bengal and Assam.	Jan. 1-Feb. 24	2	2	
Central Provinces	Oct. 29-Apr. 20	29,564	23,436	
Coorg	Oct. 29-Mar. 23	88	52	
Mysore State	Oct. 29-Apr. 20	8,809	6,819	
Hyderabad State	do	27,569	24,851	
Central India	do	9,769	7,948	
Rajputana and Ajmere Merwara.	do	2,046	1,641	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 28, 1912—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Kashmir	Feb. 3-Apr. 20	331	164	
North West Province	Oct. 29-Apr. 20	4	3	Total for India, Oct. 29-Apr. Cases, 329,670; deaths, 2 Total year 1911: Cases, 82 deaths, 691,849.
Indo-China:				
Saigon	Nov. 13-May 13	94	32	
Japan:				
Formosa	Mar. 7-Apr. 20	92	74	
Kobe	May 8	1	1	From s. s. Panama Maru fro Hongkong.
Nagasaki	Apr. 20	1		On the s. s. Tacoma Maru fro Hongkong and Shanghai.
Mauritius	Nov. 3-Apr. 11	113	69	
Persia:				
Bushire	Feb. 4-May 11	835	513	
Mohammernh	Apr. 3	1		
Reshire	Feb. 6	2		
Peru:				
Departments—				
Callao	Oct. 1-21	1		City, in November, 1 case; in Ja uary, 3 cases with 2 deat Mar. 1-26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3		
Libertad	do	8		Apr. 10, 22 cases in the ha at Trujillo. May 29 still pr ent.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shang
Manila				Apr. 6, a fatal case of pneumo form in a member of the cr on s. s. Zafiro, arrived Ap from Hongkong.
Porto Rico:				
San Juan	June 14-20	12	5	
Russian Empire:				
Astrakhan, government	Sept. 21-Jan. 7	201	180	Including 73 cases and 63 dea reported on p. 2098, Vol. I.
Ural Territory	Apr. 21-May 5	7	6	
Senegal	May 29			Present.
Siam:				
Bangkok	Nov. 4-Mar. 23		5	
South Africa:				
Durban				Total: Jan. 14-Apr.-May 25, ca 28, deaths 23.
Straits Settlements:				
Singapore	Nov. 5-Apr. 27	32	28	
Turkey in Asia:				
Basra				Feb. 13, a fatal case in a stoke s. s. Nicomedia from Bushir
Jiddah	Jan. 13-May 6	21	13	Apr. 10-12, 3 cases from s. s. A from Newcastle.
Venezuela:				
Caracas	Mar. 12-Apr. 22	6	2	
West Indies:				
Grenada	May 2-7	1	1	
Trinidad	Apr. 2-June 13	9	7	
At sea	Mar. 1-11	1	1	On s. s. Macedonia from Bomb to Aden.
Do	Apr. 1	1	1	Pneumonic on s. s. Loongsan route from Hongkong to Man

SMALLPOX.

Algeria:				
Algiers	Nov. 1-Apr. 30		2	
Oran	Jan. 1-31	2	1	
Arabia:				
Aden	Nov. 28-Apr. 22	23	11	And vicinity.
Argentina:				
Buenos Aires	Jan. 1-31		2	Oct. 1-31, 6 deaths. No dea in November or Decem 1911.
Rosario	Oct. 1-Feb. 29		41	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 28, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14-May 11	5		
Budapest	Jan. 4-10	25		
Galicia	Dec. 24-May 11	40	1	
Krain	Jan. 14-20	7		
Trieste	Dec. 3-Apr. 27	4		From s.s. Baron Call from Beirut.
Tyrol	Jan. 14-Mar. 9	3		
Upper Austria	Apr. 28-May 11	1		
Vienna	Mar. 25-30	1		
Brazil:				
Bahia	July 1-31		1	
Para	Mar. 24-May 25	10	6	Case Mar. 30 from Alagoas.
Pernambuco	Oct. 1-Apr 15		838	
Rio de Janeiro	Nov. 26-Apr. 20	32	1	
Santos	Dec. 12-23		1	
British East Africa:				
Mombasa	Mar. 1-Apr. 30	5	1	
Canada:				
British Columbia—				
Fernie	Feb. 26-June 17	7		
Nelson	Dec. 24-30	1		
Vancouver	Apr. 14-20	1		
Victoria	Feb. 4-10	1		
Vinal Haven	May 17	7		5 miles from Eastport, Me.
Manitoba—				
Winnipeg	Jan. 14-Apr. 20	4		
New Brunswick—				
Summerstown	Apr. 12			Epidemic; 10 miles from Cornwall.
Nova Scotia—				
Halifax	Mar. 24-Apr. 6	2		
Ontario—				
Hamilton	Apr. 14-June 15	17		
Kingston	Dec. 19-23	1		
Ottawa	Dec. 10-June 1	111	1	
Niagara Falls	May 8-31	2		
Sarnia	Oct. 17-Mar. 23	43		
Toronto	Jan. 6-June 8	10	1	
Windsor	Feb. 4-June 15	12		
Quebec—				
Montreal	Dec. 17-June 8	35		
Quebec	Dec. 10-June 15	308	2	
Yukon—				
Dawson	Apr. 1-6	1		
Ceylon:				
Colombo	Nov. 12-Apr 13	4		And vicinity.
Chile:				
Coquimbo	May 19-25	7	6	
Iquique	Dec. 10-Mar. 16	4	2	
La Serena	Nov. 21-30	14		
Santiago	Nov. 1-30	685	343	
Talcahuano	Nov. 26-Dec. 23	14	3	
Valparaiso	Dec. 3-Apr. 13	70		
China:				
Canton	Nov. 11-Dec. 30	40	6	
Chaochowfu	Mar. 30			Present.
Chenghai	Jan. 29-Apr. 13			Do.
Chungking	Nov. 18-May 4			Do.
Dalny	Mar. 3-Apr. 6	11	2	
Hankow	Jan. 21-Feb. 17	2	1	
Hongkong	Nov. 12-May 11	751	551	
Kityang	Jan. 21-May 18			Do.
Nanking	Dec. 10-May 11			Do.
Shanghai	Dec. 11-Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2			Present.
Cuba:				
Habana	Dec. 19-Jan. 19	2		Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12-May 11	68	20	
Egypt:				
Cairo	Dec. 10-May 6	17	3	
Port Said	Jan. 30-Feb. 4	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 28, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
France:				
Havre	Mar. 10-16		4	
Marseille	Jan. 1-Apr. 30		7	Nov. 1-30, 1 death.
Paris	Dec. 3-June 1	142	3	
Germany				Total, Dec. 31-June 1; cases, 217.
Chemnitz	May 19-25		1	
Hamburg	Jan. 21-May 18	8		
Kehl	Apr. 1-30	1		
Gibraltar	Feb. 27-Mar. 3	1		
Great Britain:				
Bradford	Apr. 28-May 4	1		
Bristol	Jan. 29-June 1	5		
Liverpool	Mar. 17-Apr. 17	2	1	Case Apr. 13, an American from the s. s. Arabic.
London	Jan. 14-Apr. 20	10	1	
Southampton	Mar. 3-9	1		
West Hartlepool	Feb. 18-Mar. 9	2		
India:				
Bombay	Nov. 19-May 18	1,304	652	
Calcutta	Nov. 19-May 4		52	
Karachi	Apr. 1-May 18	2	2	
Madras	Nov. 26-Apr. 27	211	83	
Rangoon	Oct. 1-Mar. 31	442	121	
Indo-China:				
Saigon	Nov. 13-May 13	61	13	
Italy:				
Genoa	Dec. 1-Apr. 15	47	2	
Leghorn	Dec. 16-June 8	117	1	
Messina	Nov. 19-Jan. 31		6	
Naples	Dec. 3-June 1	116	2	
Palermo	Nov. 26-June 1	2,674	910	
Rome	Jan. 1-Mar. 31	31	3	
Turin	Jan. 15-May 12	3		
Japan:				
Arima-Mura	Nov. 12-18	6	1	11 miles east from Kobe.
Formosa	Mar. 3-Apr. 20	4		
Kanagawa, ken	Dec. 17-23	1		
Kobe	Jan. 22-May 7	3	2	Jan. 20, 1 case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru. Fatal case May 7 from s. s. Manchuria from Shanghai.
Korea, province	Jan. 1-Apr. 30			Total, exclusive of Seoul, 843 cases.
Seoul	Jan. 1-May 25	20		
Nagasaki	Feb. 12-18	1		
Nogahama	Mar. 17-23	1		On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1		From s. s. Hydra from New York via Suez.
Malta	Dec. 24-Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18-June 9		8	
Chihuahua	Nov. 20-Feb. 11	92	36	
Coahuila, State	Oct. 1-30		16	
Guadalajara	Jan. 14-May 11	9	5	
Juarez	Dec. 19-June 15	26	6	
Magdalena	Dec. 23-Mar. 12	91	50	Mar. 12, 10 cases present.
Manzanillo	Feb. 18-24	1		
Mazatlan	Dec. 11-June 11		21	
Mexico	Nov. 26-May 18	400	194	
Monterey	Dec. 11-24		2	
Porfirio Diaz	Dec. 3-Mar. 23		35	
Salina Cruz	Feb. 11-Mar. 9	4	2	Mar. 23, present in vicinity.
San Antonio	Jan. 1-21	12	9	
San Carlos	do			Present.
Sandoval	Dec. 16			Do.
San Ignacio	Jan. 8	3		
San Juan Bautista	May 25	2		
San Luis Potosi	Nov. 12-Mar. 23	8	8	
Santa Ana	Jan. 8	4		
Saric	Jan. 21-27		6	
Tampico	Dec. 1-Apr. 10		16	
Tapachula	Nov. 1-May 4		19	
Veracruz	May 21-June 1	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to June 28, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands				Third quarter, 1911: Manila, 9 cases; no deaths. Fourth quarter, 1911: 38 cases.
Manila (on arriving vessel).				Apr. 1 to 6, present on the steamers Serantes and Sotolongo; Apr. 2-9, 8 cases among the crew of the United States Army transport Warren, from ports in China and Japan.
Portugal:				
Lisbon	Dec. 9-June 1	77		
Russia:				
Batum	Dec. 1-Mar. 31	2		
Libau	Dec. 17-May 26	5		
Moscow	Nov. 19-May 18	84	10	
Odessa	Nov. 26-May 18	40	1	
Reval	Nov. 1-30	1		
Riga	Dec. 24-May 25	78		Oct. 1-Mar. 31: Deaths, 14.
St. Petersburg	Nov. 19-May 25	266	73	
Warsaw	Nov. 5-Apr. 20	463	215	
Siam:				
Bangkok	do		2,281	
Siberia:				
Omsk	Jan. 1-31	7		
Vladivostok	Apr. 22-28	1		
South Africa:				
Durban	Jan. 21-Apr. 6	5		
Johannesburg	Jan. 7-Feb. 10	36		
Spain:				
Almeria	Apr. 1-30		1	
Barcelona	Feb. 6-June 1		9	
Cadiz	Nov. 1-Apr. 30		31	
Madrid	Dec. 1-Mar. 31		16	
Malaga	Nov. 1-30		45	Mar. 1-31, 5 deaths.
Seville	Dec. 1-Apr. 30		12	
Valencia	Dec. 3-May 11	435	18	
Straits Settlements:				
Penang	Feb. 11-17	1		
Singapore	Nov. 19-May 4	41	17	
Switzerland:				
Cantons—				
Aargau	Apr. 7-13	1		
Oberwalden	Jan. 14-20	1		
St. Gall	Mar. 30-Apr. 6	1		
Zurich	Dec. 3-23	6		
Teneriffe:				
Santa Cruz	Dec. 3-Apr. 13		54	
Turkey in Asia:				
Beirut	Dec. 3-May 25	1,572	107	
Turkey in Europe:				
Constantinople	Dec. 4-May 28		232	
Uruguay:				
Montevideo	Sept. 1-Dec. 31	25	4	Mar. 1-30, 1 case.
Venezuela:				
Caracas	Nov. 1-Apr. 30	15	2	
Zanzibar:				
Zanzibar	Oct. 28-Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—										
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aix-la-Chapelle	May 25	157,773	56	4										
Athens	May 22 to June 3	150,010	34								2	2	1	
Barcelona	June 8	591,272	212	30						3			1	
Batavia	May 11	217,630						1						
Beirut	May 25	80,000	20	2										
Belgrade	June 1	90,000	29								1			
Berlin	May 25	2,079,444	533	93							5	7	4	3
Bombay	May 18	979,445	872	53	80	61		36					6	
Bordeaux	June 1	253,000	92	8								1	1	
Bradford	do	289,618	88	11						6				
Bremen	do	246,850	80	15							2	1	2	
Brunswick	do	145,000		7						1	14	17		
Brussels	do	649,846	198	28							3	1	5	
Budapest	May 25	1,000,000								1	3	2	3	1
Calcutta	May 4	890,493	529	31	94	84		3					2	
Catania	June 7	207,000	87	5					1		1			
Chemnitz	June 1	303,500	89	9								1		1
Cologne	May 25	530,544	129	12								1		
Do	June 1		137	28							4	2	2	
Colombo	May 11	227,026	133	10						1				1
Copenhagen	May 25	465,000	116	18							1		2	2
Coquimbo	do	14,000	20	2				6						
Dalny	May 11	45,573	32								1			
Do	May 18		18	1							1			
Denia	June 1	12,431	2							1				
Dresden	May 25	557,800	138	27							1	2		1
Dublin	June 1	406,536	153	31							1	3	12	1
Dundee	do	171,006	62	5								1	5	2
Edinburgh	do	321,200	92	14									4	1
Erfurt	May 25	127,004	46	4							1	2		
Glasgow	June 7	785,600	254							2	3	7	6	
Georgetown	May 25	57,577	55	7						2				
Havre	June 1	136,159	53	8						1		1		
Hongkong	May 11	336,488			118			4						
Karachi	May 18	157,290	147		65			1					1	
Kobe	May 26	425,023	113									1		
Kingston	June 15	57,379		1						2				
Konigsberg	June 1	252,200	91	8								1		
Leeds	June 8	445,568	115	9							2		8	
Leipzig	June 1	589,850	163	23								3	1	2
Leith	do	81,000	23	3								1		
Leghorn	June 8	104,000	35											
Libau	June 3	84,000						1						
Liverpool	June 1	752,055	266	26						1	1	2	31	5
London	do	7,340,119	1,506							4	4	7	37	35
Lubeck	do	100,000	35	2								1	1	1
Madras	May 18	518,660	373					5		2			3	
Manchester	May 25	714,427	255	26						1	1	1	24	10
Do	June 1	214,427	230	20						1			15	9
Maracaibo	June 7	50,000	16	5						1				
Mazatlan	June 11	22,000	18	1				2						
Mexico	May 18	719,052	474	20				12	9		2	1	6	3
Monterey	June 9	100,000	56	5						1				
Montreal	June 15	466,197	139	31						1	1	1		1
Moscow	May 11	1,617,157	892	101					3	1	8	10	13	4
Do	May 18	1,617,157	792	88					1		11	12	16	5
Munich	May 25	610,000	175	30							1		4	
Nagoya	May 18	428,740	120									3		
Nantes	May 26	170,535	59	11						1				
Do	June 2	170,535	48	17										
Para	May 25	185,000	76	11				1						
Paris	do	2,888,116	960	266				1		3	7	2	23	5
Do	June 2	2,888,116	899	212						7	9	6	24	6
Port of Spain	May 25	60,000	35	7						3			1	
Prague	June 1	225,817	67	10						1		1		1
Quebec	June 15	78,200		2										

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

AUSTRIA-HUNGARY—*Brünn.*—Month of April, 1912. Population, 108,944. Total number of deaths from all causes 310, including diphtheria 3, measles 14, scarlet fever 2, tuberculosis 69.

BRAZIL—*Ceara.*—Month of April, 1912. Population, 60,000. Total number of deaths from all causes 195, including tuberculosis 20, typhoid fever 5. There were 2 deaths from yellow fever.

BRITISH EAST AFRICA—*Mombasa.*—Month of April, 1912. Population, 26,000. Total number of deaths from all causes 45, including smallpox 1, tuberculosis 2, typhoid fever 1. Cases reported: Typhoid fever 1.

CANADA—*Hamilton.*—Month of May, 1912. Population, 80,000. Total number of deaths from all causes 121, including diphtheria 1, measles 5, scarlet fever 1, tuberculosis 7. Cases reported: Diphtheria 13, measles 466, scarlet fever 20, tuberculosis 3.

GREAT BRITAIN.—Week ended May 25, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 13 per 1,000 of the population, which is estimated at 17,639,816.

Ireland.—The deaths registered in 22 principal town districts correspond to an annual rate of 16.9 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Clonmel, viz, 00.0, and the highest at Newry, viz, 26.2 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 15.4 per 1,000 of the population, which was estimated at 2,182,400. The lowest rate was recorded at Clydebank, viz, 6.5, and the highest at Ayr, viz, 21.8 per 1,000. The total number of deaths from all causes was 644, including diphtheria 6, measles 29, scarlet fever 3, typhoid fever 2.

GUAM.—Three weeks ended April 19, 1912. Population, 9,000. Total number of deaths from all causes 16, including tuberculosis 4. There were 69 cases of hookworm disease.

HAWAII—*Hilo.*—Four weeks ended May 25, 1912. Population, 3,500; total number of deaths from all causes 4, including diphtheria 2, smallpox 1, tuberculosis 2. Cases reported: Diphtheria 3, tuberculosis 3.

ISLE OF PINES.—*Nueva Gerona.*—Twenty days ended June 10, 1912. Population, 892. Total number of deaths from all causes 1, from tuberculosis.

NEW ZEALAND.—Month of March, 1912.

Auckland.—Population, 104,728. Total number of deaths 64, including tuberculosis 1, typhoid fever 1.

Christchurch.—Population, 82,004. Total number of deaths 46.

Dunedin.—Population, 65,690. Total number of deaths 42, including tuberculosis 1.

Wellington.—Population, 71,427. Total number of deaths 48.

SOUTH AFRICA—*Bloemfontein.*—Month of April, 1912. Population, 22,000. Total number of deaths from all causes 42, including tuberculosis 2, typhoid fever 2. Cases reported: Scarlet fever 5, tuberculosis 3, typhoid fever 7. Remarks: Of the above, 28 deaths from all causes and 2 from tuberculosis; 1 case of typhoid fever and three cases of tuberculosis were reported from the colored population only.

SPAIN—*Malaga.*—Month of March, 1912. Population, 135,000. Total number of deaths from all causes 346, including diphtheria 2, measles 8, smallpox 5, tuberculosis 34, typhoid fever 1.

URUGUAY—*Montevideo.*—Month of March, 1912. Population, 343,849. Total number of deaths from all causes 489, including diphtheria 1, tuberculosis 73, typhoid fever 12. Cases reported: Diphtheria 11, measles 7, scarlet fever 9, smallpox 1, tuberculosis 115, typhoid fever 60.

By authority of the Secretary of the Treasury:

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.

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PUBLIC HEALTH REPORTS.

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